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ABSTRACT

The first aim of this study was to investigate the influence of child spacing, family size, and parental income and educational level on the way parents perceive and conceptualize the world around them and children within the family. A second aim was to explore the relationship between parents' belief systems regarding children's cognitive development and the behaviors parents use when teaching their children. A third objective was to assess the influence of parents' teaching behaviors, including distancing strategies, on the children's representational competence. Participants in the study were 120 families that varied with respect to number, spacing, ordinal position and sex of children and parent education-income level. Discriminant function analyses and analyses of variance indicated that both parents and children from one-child families differed from those from three-child families and that child spacing and SES were often involved in interactions that produced significant differences between groups. Regression analyses indicated that parental beliefs and behaviors and parental distancing behaviors and child outcomes were related to one another above and beyond demographic characteristics. Results of path analyses generally supported the model of the family in which parental distancing behaviors affect children's representational competence and children's ability level, and in which parental education and age and number of children affect parental beliefs. (Author/MP)

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Parental Distancing, Beliefs and Children's Representational Competence Within the Family Context

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Abstract

A study of relationships among demographic variables such as SES and family constellation, process variables such as parental beliefs and teaching strategies, and preschool-age children's level of representational competence was conducted within the framework of the family as a system of mutual influences. One hundred and twenty families that varied with respect to number, spacing, ordinal position and sex of children and parent education-income level were participants. Discriminant function analyses and analyses of variance indicated that both parents and children from one-child families differed from those from three-child families and that child spacing and SES were often involved in interactions that produced significant differences between groups. Regression analyses indicated that parental beliefs and behaviors and parental distancing behaviors and child outcomes were related to one another above and beyond demographic characteristics. Results of path analyses generally supported the model of the family in which parental distancing behaviors affect children's representational competence and children's ability level, as well as parental education, age and number of children, affect parental beliefs.

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Chapter I

Overview

The basic orientation of this research program is that the cognitive development of children is the result of a complex interplay of factors, with family environment playing a major role. Family structure variables, such as the number, spacing, ordinal position and sex of children, and process variables, i.e., the nature of parent-child interactions, were investigated as sources of influences on the development of children's cognitive abilities.

Of major interest in this investigation is the development of representational thinking. Piaget (1962) and Bruner (1966), among others, have pointed out that essential processes of intellectual functioning can be subsumed under the rubric of representational thought, wherein the individual is capable of using signs and symbols in the service of problem solving. We see these functions as the substrate upon which intelligent behaviors, commonly assessed by IQ tests, are built. The ability to solve numeric, language, and other types of problems, and the acquisition of knowledge of the social world derives from the capacity to think in representational terms.

At present, little research has been conducted which deals with the effect of the family environment on such functioning. Most researchers have tended to focus on the individual, paying little or no attention to any class of ecological or contextual variables. Sigel, in his theoretical statements (Sigel, 1970, 1971, 1972), has suggested that the parents play a vital role in the development of representational thinking. He also proposes a more specific definition of representational thinking. Representational thinking ability is held to be a fundamental human capacity, with the quality of this ability influenced by the cultural milieu in which the child is reared. Representational competence refers to the ability of the individual to represent ostensive reality in a form different from, but related to, ostensive reality. Representational competence is held to consist of the following skills: (1) the ability to transcend the physical environment and the immediate present by representing events, objects, and situations in mental terms; (2) the ability to relate past to present, and the present to the future; and (3) the ability to express these constructions in mental terms (Sigel, 1972).

Representational competence according to Sigel (1970, 1971) develops in part as a function of a particular class of strategies employed by parents in their formal and informal teaching encounters with their children. Sigel refers to this class of strategies as distancing behaviors because they serve to separate the child mentally from the ongoing present. These strategies or distancing behaviors, have been operationalized to include parental behaviors which place demands on the child to reconstruct past events, to employ his imagination in dealing with objects, events, and people, to plan and to anticipate future actions (with particular attention being paid to articulation of such intentions), and finally to attend to the transformation of phenomena. Such behaviors make the demand on the child to infer from the observable present. In the course of making such inferences, the child has to present to himself the outcomes or reconstructions of previous events. Representational thought may be on the figurative level; that is, the child creates an image of an event. Also, representational thought can include mental operation; i.e., thinking in terms of actions and processes: e.g., adding, multiplying, classifying, etc. The distancing hypothesis holds that the development of children's representational competence is influenced to the degree to which parents employ distancing strategies. The type and quality of "distancing" strategies employed, as well as frequency, are related to levels of development.

In essence, representational thinking processes employed by children are not isolated outcomes, via maturation or natural growth, but rather are influenced by particular environmental demands--in this instance interactions with parents. In the present research, representational thinking in young children was studied in relation to specific parental behaviors and parental beliefs about the cognitive capabilities of the young child. We examined variation in parental beliefs and the use of teaching strategies as expressed in the context of family size, child spacing, and the income and educational level of the family. With respect to income and educational level of the family, Sigel has suggested that differences in representational ability found between lower and middle socioeconomic groups may well be a function of the differential parental use of distancing behaviors (1970). Some support for these hypotheses have been reported by Donovan (Note 1).

In summary, it is proposed that these types of parental behaviors form a significant base for the development of representational abilities as defined herein, and further, that the utilization of such behaviors by the parent is a function of parental constructions of child development processes (belief system). Moreover, as parents' experience with children increases as a result of having more children, it is possible that there will be a change in beliefs and in the utilization of distancing behaviors. It is assumed that the cognitive environment the parents provide through distancing behaviors will vary as a function of parental level of education, belief systems and family constellation.

Specific Aims of the Study

The present research report had a number of interrelated objectives. The first aim was to investigate the influence of child spacing, family size, and parental income and educational level on the way parents perceive and conceptualize the world around them and children within the family. Parental beliefs about child development in general and the parents' perspectives of their own child in particular were examined as a potential set of determinants for types of cognitive environment the parent provides for the child. The question studied was how parents' beliefs about the child as an information processing individual are affected by the parents' experience in particular family constellations. A second aim was to explore the relationship between parents' belief systems regarding children's cognitive development and the behaviors parents use when teaching their children. A third objective was to assess the influence of parents' teaching behaviors, including distancing strategies, on the children's representational competence.

In broader terms, the basic goal of this research was to study familial factors influencing the ontogenesis of representational thought. The familial factors selected for study were number, spacing, ordinal position and sex of child(ren) within two-parent families. Within this context, parental belief systems regarding children's cognitive development were investigated. Finally, we were interested in the relationship between beliefs, type of distancing strategies parents use and children's representational competence. Prior studies of the relationship between family constellation and intelligence have proved valuable, but they have been essentially descriptive and have not focused on processes within the family. These descriptions raise questions as to just what it is about these familial constellation factors that influence intellectual development. Hypotheses of Zajonc and Markus (1975) regarding differences in the intellectual environment of the home with number and spacing of children are post hoc and need further testing.

Conceptualization of Parent Belief System

Parental beliefs about the processes of development in general and the capabilities of their own child in particular are likely to be major influences on parental practices. This hypothesis was derived from George Kelly's (1955, 1963) theoretical system known as Constructive Alternativism. Kelly proposed that each individual formulates personal constructs through which the world is viewed and interpreted. These constructs are defined as templates that fit over the realities composed by the individual. Personal constructs are used to predict events and assess accuracy of such predictions after events have occurred. Thus, one's constructs guide behavior when interacting with others.

Empirical research relating parental conceptual systems or beliefs to childrearing practices has been scant (Harvey, 1966). There is some indication, however, that parents do evolve certain styles which are analogous to our view of belief systems, and that these elements are related to particular parental behaviors. For example, Weigerink and Weikart (1967) and Hess and Shipman (1965) provide data indicating a relation between parental cognitive styles and parental teaching strategies. Less effective "teachers" are described as using a more descriptive-concrete style. Bishop and Chace

(1971) reported that parents' level of conceptual development, defined by Harvey's (1966) This-I-Believe Test, was related to parental structuring of the home play environment. Findings such as these provide indirect support for the basic hypothesis of this research regarding the relation between parental beliefs and behaviors. It has been suggested that descriptions of parent behaviors should be augmented with information about the nature or extent of parents cognizing about their children (Bell, 1979; Freeberg & Payne, 1967; Parke, 1978).

Parents' beliefs about children can be viewed as a means through which events are categorized and the parent's own behaviors are guided, just as Kelly's personal constructs are seen as the directing source of behaviors in interacting with any other person. Such beliefs about children are constructed on the basis of experience with one's own child(ren), as well as on the basis of the parents' own experiences as a child in their family. This belief system provides a framework for assimilating new information or knowledge. Parents generate constructs from their experiences interacting with their children. They systematize these constructs so as to minimize psychological inconsistencies. Interactions with children subject parents' constructions to a validation process, wherein some constructs are maintained and others are challenged. Constructions as definitions of reality may undergo progressive changes as a function of assimilation of new information to existing systems.

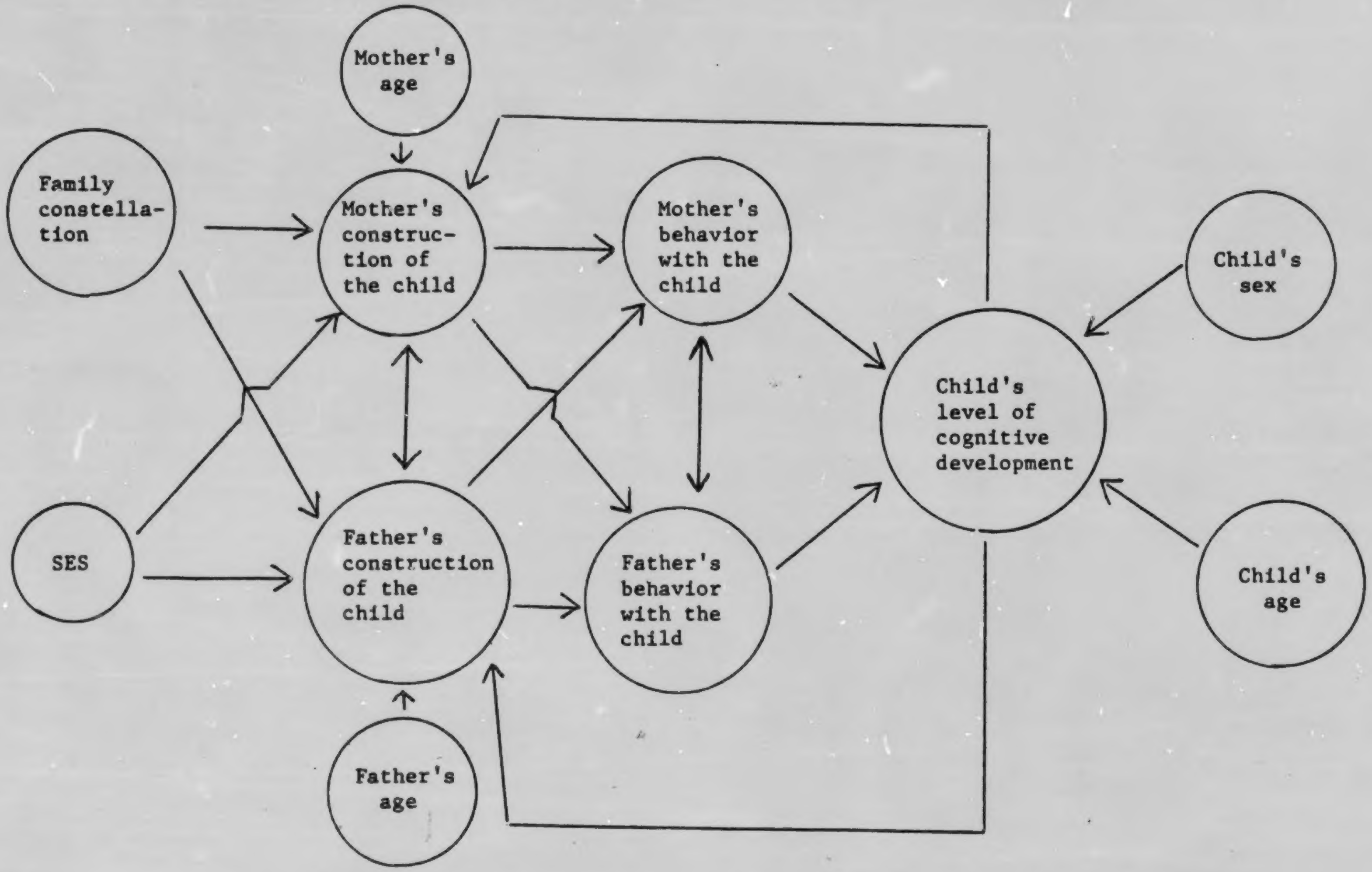
Experience with one's own child(ren) influences the construction of a belief system. Thus, the number and sex of children in the family have the potential of influencing these beliefs. In addition to familial factors influencing the beliefs of parents, external factors, e.g., experts, other parents, social events, etc., can also impact parents. Socioeconomic status is another source of influence; and Bronfenbrenner (1958) suggests that expert opinion influences social class levels differently. That is, parents in higher socioeconomic groups are more likely to have been exposed to more current developmental theories and are therefore more likely to have assimilated such information into their belief systems.

This conceptualization of belief systems leads to a model of the family in which each member has impact on other members. Since parental belief systems are subject to modification as a result of new or discrepant experiences, the behavior and abilities of each child in the family have potential impact on these beliefs as information about the child's behavior is accounted for within the context of the existing belief system. If a change in beliefs occurs, behaviors stemming from beliefs should also undergo a modification. These changes would be relative to all other family members, although the initial source might reside in only one of the children's behaviors. The spouse, as well as the other children, might well be affected. Additional feedback from these family members must also be dealt with in the context of a belief system which is continuously being constructed by the parent. Thus, within the limited environment of the family, there are reciprocal relationships between parent and child and between the two parents (see Figure 1).

Models such as this provide possible sources of explanations of the manner in which parental influences are transmitted as well as changed. A focus on the mutual influences of members of a family unit, must, however, include consideration of family structure variables such as number, ordinal position and sex of the children. This concept is hardly new with respect to clinical practice, but it is often neglected as a salient variable in studies of the impact of parents on children's cognitive development. For example, Bowen

Figure 1

Model of the Mutual Influences within the Family[1]


Mother's age
Family constellation
Mother's construction of the child
Mother's behavior with the child
Child's sex
Child's level of cognitive development
SES
Father's construction of the child
Father's behavior with the child
Child's age
Father's age

[1] This model is somewhat simplified for presentation purposes. For example, one would also predict a significant correlation between mother's age and father's age. The relationships indicated in this model are those that focus on the direction of influence between family members.

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(1978) relies heavily on information concerning ordinal position in the family system in his formulation of the family projection process. While Bowen had worked primarily with families of schizophrenics and alcoholics, theoretical considerations indicate that factors such as these should also be included in investigations of functioning in "normal" families and in clinical practice with families whose members evidence less severe problems. For example, parents of an only child have limited experience interacting with children, relative to parents of multiple-child families. Therefore, their basis of comparison is limited. If the only child's behavior is dissonant with expectations stemming from previously constructed beliefs, the parent may alter his/her beliefs concerning all children (e.g., "Four-year-olds are really pretty capable after all") or their child may be viewed as "extreme" given the belief system (e.g., "My child is especially gifted"). With the birth and growth of a second child, it is likely that parental beliefs have the greatest potential for change than at any other time in the parenting lifetime. At this point, beliefs based on experience with the firstborn are most likely to be challenged by behaviors of the second-born. Retrospective reports of parents obtained during interviews in our study support this notion (e.g., "I was amazed how different she was from Ricky, right from birth"). It is unlikely that the first two children will be extremely similar in dispositions, aptitudes, developmental milestones and capabilities, experience with these two different children will provide sources of conflicting information to the parent. To resolve the conflict, the parent may reorganize or broaden the beliefs system. For example, the belief system might simply become modified to include a broader range of what is normal or typical when the two children differ (e.g., "Children learn to talk anywhere from age one to three"). Or one child is seen as clearly outstanding only after experience with the other (e.g., "I didn't realize how unusual it was that Elaine spoke in sentences on her first birthday"). The system might become differentiated with regard to sex differences for the first time (e.g., "Elaine is so talkative. Boys just aren't as verbal."). Thus, parental beliefs and subsequent parental behaviors are likely to vary with number of children, ordinal position and sex of the children. But more importantly, the resultant behavioral changes are relative to all family members, not just the child whose behavior first impinged on the prior belief system. For example, once the belief system has become differentiated by sex of child, parental behaviors toward all the male and the female children in the family will be adjusted accordingly.

In summary, it is possible to construct a model of the family in which mutual influences among members play a vital role in determining how parents behave with children, affect one another, and are affected by the children's capabilities and development. Within such a model, factors such as family constellation and socioeconomic status must be considered because they provide different structural contexts within which the mutual influences operate.

Conceptualization of Distancing Behaviors

Distancing strategies create psychological distance between the individual and the ongoing environment. Distancing behaviors, whether emanating from others (parents, teachers, peers) or from the physical environment, make demands on the person (individual of any age) to infer from the observable present. In the course of making such inferences, the child has to re-present to himself and to transform these experiences into representational systems to communicate the outcomes of reconstructions or the predictions of events.

Characterization, Form and Function of Distancing Strategies

The form of the distancing strategy can be telling--i.e., presenting a message; or posing a question. Distancing behaviors vary in the degree to which they activate the separation of the person from the ongoing present. Where simple declarative statements require passive listening and associative responses, open-ended inquiry demands active engagement (Sigel & Cocking, 1977). Thus, such cognitive activity demands "function as instigators, activators and organizers of mental operations" (Sigel & Cocking, 1977, p. 213).

While both forms place some demand on the child to represent the experience, the hypothesis is that the asking, the inquiring, maximizes the development of representational thought in the young preschool child. Inquiry, when employed systematically, serves to create continuous cognitive dialogue for the participant to engage in social interchange. Such continuous dialogue has the potential to create opportunities for generating and resolving discrepancies. Thus, the inquiry in this context may serve two functions: (1) generating discrepancies and/or (2) resolving discrepancies.

Discrepancies created by inquiry "propel the organism to change because of the inherent nature of the organism's inability to tolerate discrepancies" (Sigel & Cocking, 1977, p. 216).

In sum, by creating discrepancies, distancing behaviors contribute in a major way to cognitive development. The contention is that the inquiry generates tension while creating a discrepancy, thereby increasing the stress level, and this stress causes disequilibrium, which the child strives to resolve via some mental action (Sigel & Cocking, 1977). The resolution is perhaps short-lived. Another question can reinstitute the cycle and it is this cyclical aspect that is central to the thesis that distancing strategies are critical determinants of cognitive growth.

Concept of discrepancy: Piaget (1977) has argued that thought evolves through changes from a dynamic equilibrated state to a dynamic nonequilibrated one. This change in state or disequilibrium has been referred to as discrepancy (Sigel & Cocking, 1977). A discrepancy is a dynamic state of disequilibrated tension, whose resolution yields a reorganization to a new state. Where no discrepancy exists, the status quo or the dynamic balance reigns and there is no external or internal need to change.

Discrepancies refer to the differences between the given and the desired, the belief and the counterbelief, the expected and the unexpected. Salient discrepancies create the potential for change in the child's constructs of physical and social reality. With increasing maturity and capability to comprehend the symbol systems, e.g., learning to read, learning to comprehend pictures, signs, etc., discrepancies can occur on a symbolic level as well as on an action level, with internal dialogues functioning similarly to the interpersonal inquiry generated through reading, etc. Fundamentally, change occurs when the equilibrium of the individual is disturbed by whatever source, activating the person to resolve this state. The resolution may result in a new orientation.

Discrepancies may take any of the following forms:

(1) Discrepancies can occur between an internal perspective and an external demand. For example, in a conservation experiment with two balls of clay where one of the balls is deformed, the child argues that the deformed ball has more clay than the other ball. The discrepancy is identified by the child. If when told that nothing was added or taken away, the child does come to realize the two balls although different in appearance have the same

amount of clay, the discrepancy between the observed and the inferred state (amount) is resolved. If, however, the child continues to reject the idea of similarity and continues to accept the difference in appearance and amount as true differences, then the discrepancy remains.

(2) Discrepancies can occur between two internal events. For example, the child is asked, "Will you tell me the best ways to drive to your house?" when there are two routes to the house. The child may be in conflict as to which route to present.

(3) Discrepancies can occur where both events are external, e.g., the child is shown clear water and a set of colored powders. He is asked to predict what would happen if two of the colors were mixed (red and blue) and put into the water. After the colors are mixed another question is posed, "Why do you think the water is colored purple and not red or blue." The discrepancy in this case arises in the context of the action and is external to the child.

It will be recalled that resolution of discrepancies, whatever their type, was proposed as a necessary step in cognitive development. Distancing theory goes further, contending that Socratic and/or dialectic inquiry is the procedure of choice to foster resolution of the discrepancy. Let us turn now to an explication of this point of view.

The process of inquiry: Socratic dialogue is not just a simple posing of questions, but rather has a set of rules. Socratic rules are, in fact, one type of distancing strategy. Types of Socratic rules can be used in solving causal problems. Imagine a case with an extreme wrong value [e.g., if the student has not yet mentioned temperature with respect to rice growing, the teacher posing this fact, forces the student to pay attention to a factor he is ignoring (Collins, 1977)]. In fact, the Socratic rules serve the cause of cognitive development because they activate representational thought and give it form and direction.

This point is crucial for the argument regarding distancing theory. For example, when an individual asserts something, e.g., rainfall is a necessary factor for plant growth, a counter example can be stated: How come plants grow in sheltered places such as homes or greenhouses? The argument follows that rainfall is not a direct cause but is an indirect cause, since it provides water which in turn becomes available for watering plants indoors. Take another example: Prediction statements are requested. In a conservation of mass task, after having attested to the equivalence of the amount of water in two jars, the child is asked how high the water will go if it is poured into a tall, thin cylinder.

In each of these cases the problem may be posed by asking an explicit question which focuses the child's attention on a particular set of events in particular situations. In either case, to answer the question the child has to reconstruct from the past (retrieve) and integrate that knowledge with the presenting problem. Further, she/he has to assimilate the ongoing event. Through inquiry and close attention to the child's response, the parent can determine at what level the child is thinking as well as what his knowledge base is. The child is reasoning within the confines of the problem posed by the parent.

You may ask whether this set of inquiry strategies precludes the autoregulatory functions of the child in striving to solve problems. The argument is quite the contrary. The child is doing the mental work along with the parent (they are mutually engaged in trying to solve a problem). To be sure, the parent has the control since she/he is structuring, and even defining the problem. However, this need not be the case. The parent can observe the child as she/he is engaged in a task and enter into a dialogue. In this case, the child has chosen the problem and the parent is taking advantage of this opportunity to help elaborate and articulate the child's involvement. In either case the child and parent are actively engaged.

Within an inquiry context, the dialogue the parent engages in must be dialectic. This is the process where the parent employs rules of inquiry which do involve counterexamples, contradictions, etc. The parent can compare and contrast instances to create a unity. All of these processes are involved in coming to acceptable resolutions.

In either physical or social problem solving, the child and the parent begin with incomplete knowledge; that is, the parent does not know what the child knows and the child probably does not have the information necessary to solve the problem, and if he does, he may not be aware that he has it or how to apply it. The inquiry may serve five functions: (1) to elicit what knowledge the child has and thereby the parent becomes informed; (2) to provide an opportunity to relate bits of knowledge that the child does not see as related or even relevant, (3) to provide a basis for the child knowing what he does not know, (4) to tell the parent what the child does not know or what he needs to know, and (5) to foster decentration. The degree(s) to which the dialogue enhances the child's movement toward problem-solving and, in fact, thinking will be dependent on the subsequent steps the parent and the child take to complete the knowledge base (Sigel & Saunders, 1979).

From the perspective of either parent or child, the interaction described serves to demonstrate that inquiry is in fact an experience and an exercise in discrepancy creation and movement toward resolution. Most important, it provides an experience that can contribute to the child's awareness of his knowledge and of the gaps in his knowledge. It is also an opportunity for the child to objectify by articulating what he does and does not know. This movement toward objectification and articulation is a step in the direction of providing opportunities for checking one's knowledge about events with others.

Knowledge is organized at different levels of "knowing." In the case of the young child, knowledge to be used from an inquiry encounter will be limited to the child's capability to assimilate and concomitantly to accommodate to this new information. Children come to "know" an event and to understand the operations as well as the implications involved relative to their developmental level. Knowledge acquisition can be described in terms of levels, e.g., figurative-operative, where levels of knowledge are constructed and integrated and subsequently re-integrated. This is analogous to Werner's notion of equilibration hierarchical integration (Werner, 1948).

Telling may become effective as the child matures, since she may have evolved internal dialoguing--a consequence of experience with inquiry. Internal dialoguing refers to internalized inquiry--asking oneself questions as a reaction to "telling" statements, e.g., asking oneself what does the speaker mean or why should that reflect causal relations? With the acquisition of internalized dialoguing, older children and/or adults may not need to engage in complex levels of inquiry. This is not to say that inquiry cannot play an important role in the developing representational competence with older children or adults; the function of "telling" may converge with inquiry to the degree that the individual engages in internal dialoguing. While direct empirical support for this assertion is still lacking, it is nevertheless a logical position. Observations of adult-adult interactions, e.g., individuals altering their ideas as a function of listening to a lecturer, suggest that with increasing maturity, individuals can react to a didactic presentation as if they were reacting to an inquiry. Internal dialoguing may function as a mediator between a didactic presentation and reorganization of a listener's response.

While the aforementioned model appears formal, it is the schematic by which parent-child interaction in a teaching session can be analyzed. To be sure, parents teach their children in countless ways and over long periods of time. These teaching interactions are difficult to define and isolate, but naturalistic observations of parents and children attest to the fact that formal and informal teaching exists in the family environment. Since, as will be seen in Chapter II, we did not employ naturalistic observational procedures, but rather elected to observe parents teaching their children in a structured somewhat contrived context, we will show that even in such a task parents seem to "distance" in ways that are "their" ways (at least their verbal reports attest to the "typicality" of their interactions).

Essentially then, our interest is in identifying the kinds of distancing strategies parents use and whether the types and frequencies vary with family constellation.

Classification and Definition of Distancing Strategies

In addition to classifying distancing strategies into two forms, telling and asking (inquiry), three levels of distancing strategies may be identified.

The criterion that distinguishes a distancing strategy from other types of interaction is the mental operational demand for the child to transcend the ongoing present, the intellectual requirement to separate oneself actively from the present. Co-related with this mental activity is the degree to which the strategy creates the demand for internal representation--in effect mental distancing. To be sure, such an internal process can be inferred, but at this point judgment is made on the "demand" quality of the strategy. This is what gave rise to our defining three levels of "distancing" demand. These three levels of mental operational demands are presented in Table 1.

Level I distancing strategies are those which make minimal demand on the individual to separate self from the ongoing, minimal inferences are involved. Strategies comprising Level I may be characterized as those placing a demand on the individual for associationistic, observable or automated information. There is little active strategic thought involved at this level. Level I strategies are referred to as Low Level demands and may be presented to the child in either question or statement form. Level II, the Intermediate Level, refers to those strategies which increase the demand on the child to re-present or to relate disparate events. Demands to analyze and classify are also included at this level. Essentially, Level II involves transcending the observable but still using it as a basis for mental activity. The Level II demands can be said to involve figurative type representational thought.

Level III would be analogous to Piaget's notion of operational thought, for the demands are for the child to make causal inferences, predict outcomes (which are derived from previous experience, rather than evidencing a direct one-to-one correspondence). As can be seen from Table 1, the distancing

Table 1

Verbal Distancing Strategies[a,b]

Low Distancing Demands (Level I)

Label

Produce information

Describe, define attributes

Demonstrate

Intermediate Distancing Demands (Level II)

Sequence

Reproduce

Describe similarities

Describe differences

Estimate

Enumerate

Infer similarities

Infer differences

Symmetrically classify

Asymmetrically "

Synthesize within classification

High Distancing Demands (Level III)

Evaluate (consequence, competence, affect, effort, necessity)

Infer causal relations

Infer affect

Generalize

Transform

Plan

Verify

Conclude

Propose alternatives

Resolve conflict

[a] These are content categories which may be in telling or asking form.

[b] Details with definitions of coding system are in Appendix C.

strategies at Level III place demands on the child to engage in hypothetical thought. Rational predictions can only be made in these terms. Questions or statements included in this category are called High Level.

Thus, the levels of distancing are categorized as Low, Intermediate and High depending on level of mental operation demands made on the child.

Conceptualization of Child Outcome Variables

In previous sections, a conceptualization of parental belief systems as predictors of parental distancing strategies was presented. The significance of these distancing strategies resides in the relationship of distancing strategies to children's cognitive behaviors, especially their representational competence.

Representational competence, it will be recalled, was defined as follows: (1) the ability to transcend the physical environment and the immediate present by representing events, objects, and situations in mental terms; (2) the ability to relate past to present, and the present to the future; and (3) the ability to express these constructions in mental terms (Sigel, 1972). To this, there is added a fourth skill, namely, the transformation of mental representations into appropriate symbol systems, and concomitantly, the awareness that more than one symbol system may be used, e.g., pictures and words can express the same basic idea.

These representational skills involve the following mental processes: memory, i.e., recognition, reconstruction or reproduction of past experience; anticipation or prediction, i.e., relating of previous or ongoing experience to future outcomes (actions); transformation of experiences and/or communications from one symbol system to another, indicating that the child can conserve the meaning of a communication.

Perhaps analysis of a true-to-life interaction between a parent and a child will illustrate our conceptualization. The parent asks the child, "What did you do in school today?". This query is an open-ended one, in which the child is asked to reconstruct or describe a set of experiences. The distancing level is low since the child is asked for descriptions, but the question is open-ended allowing the child some freedom in how to organize the response. Thus, the child re-presents the activities in school, transforms these internal representations into language and communicates to the parent. The parent has of course a number of alternatives as to how to respond to the child's telling. The parent can continue or stop, depending of course on a variety of circumstances. It is the dialoguing here that makes a difference (Rosner, 1978).

This prototype illustrates a cognitive analysis, where each component is categorized in terms of its structure or content. The particular cognitive processes engaged by the distancing strategy can be readily identified by reviewing the strategies listed in Table 1.

Socioemotional Context of Distancing

Distancing strategies occur in a living interactive setting and are kept embedded within a social-emotional context. Emotional tone can be expressed by parents in a distancing encounter directly by some demonstration of emotional support for the child in his/her effort to participate in this "thinking" interaction. Such emotional support systems may be critical in engaging the child in such interactions, as well as helping to sustain the child in the course of the interaction. Encouragement to persist, expressing confidence in the child's ability to cope with the problem, and accepting the child's level of analysis, are among the types of socioemotional responses that are presumed to influence the child's representational competence. Of course, not all socioemotional responses are necessarily supportive. Criticism and impatience in waiting for the child's response are also among the types of socioemotional responses identified. Categories in the socioemotional area that were of interest in this research are presented in the Parent-Child Observation Manual (Appendix C).

While these types of socioemotional categories of behavior are identified by their direct message, affective factors can also be indirectly communicated through tone of voice, type of question. These are very difficult to evaluate and at this point they will be discussed as a class of behavior requiring attention. There is every reason to believe that such subtle and indirect expressions of affect communicate messages which in turn may influence the child's representational competence. While we have in the previous discussion identified verbal factors, we must not overlook body language that gets expressed in distancing encounters. The parents' use of eye contact, physical intrusion and takeover in task activity are all types of behavior that can express degrees of control, mental operational demand quality, etc.

Although our focus is on the child's response to verbal distancing strategies, we are interested in identifying other dimensions which are operative in the parent-child interaction that may influence the quality of the child's developing representational competence. In this section we have identified, in addition to the verbal distancing strategies (telling or asking), the verbal social-emotional system as well as the body language (physical). Physical aspects are not included in the study.

In this context, the verbal distancing strategies by virtue of their structure (form) and content (level) will differentially activate particular mental operations. From this one would conclude that the child's representational competence will be influenced by the frequency and quality of particular types of strategies used by parents.

Child outcome variables that will be assessed are: anticipation, memory, levels of inference or organization. These processes that are presumably activated by distancing strategies are not limited to physical knowledge, but should generalize to all contexts that require the same mental operation as a basis for a response. Consequently, the variables we investigated include two domains of knowledge--physical knowledge and social knowledge. In sum, outcome variables regarding children's representational competence include: anticipation and prediction, type of memory, levels of inferences, in physical and social domains.

Interrelationships between Family Constellation, Parental Beliefs, Behaviors and Child Outcomes

In previous sections, parental beliefs and behaviors have been related to one another and verbal distancing strategies have been discussed in relation to the development of representational competence in general terms. In this section, these three major classes of variables, parental belief systems, parent behaviors and child outcomes will be presented within the context of the family environment, i.e., family constellation and socioeconomic status.

First, the relationship between parental belief systems and parental behaviors will be considered. At the outset of this project it was hypothesized that an important determinant of parental teaching interactions with their children would be parents' constructions of child development. For example, it would be consistent for parents who posit that children attain knowledge as a result of their own cognitive processing of information to evidence distancing strategies in teaching interactions with their children. That is, parents who believe that children develop through their own manipulation of objects, ideas and events, through resolution of discrepancies or conflicts, and through representing transformations mentally are more likely to make demands on the child to mentally manipulate, resolve, and transform. On the other hand, parents who view child development as the acquisition of knowledge from an environmental source, i.e., merely absorbing information from an external agent, are more likely to use a didactic approach. Such parents would be expected to provide facts and information in a directive manner when teaching their child(ren).

It was hypothesized that parental teaching behaviors, including distancing strategies, would vary with family constellation and socioeconomic status for two reasons. The first reason is related to the hypothesized linkage between beliefs and behaviors. It has been argued in a previous section that beliefs are subject to change with the addition of more children to the family unit and with differential exposure to expert opinion for various socioeconomic status groups (see pp. 6-10). Parental behaviors that presumably stem from such beliefs, would also vary with these demographic characteristics. It is not necessary, however, that a one-to-one correspondence between beliefs and behaviors exists. That is, distancing behaviors have been hypothesized to vary with family constellation for the additional reason of constraints on time and energy of the parent. Consider, for example, parents with near spacing between children and those with far spacing between children who may in fact evidence similar beliefs about processes of child development. In fact, distancing strategies, especially inquiry forms at Levels II and III, are very time consuming. Interactions in which these strategies are used are not efficient if the goal is for the child to achieve the "correct" solution. Parents with three children who are close in age must expend a great deal of effort to engage the child in a distancing experience while needs of other children must also be met. Thus, although determinants of parental behaviors are seen as belief systems, the family context in which parents interact and express their beliefs in behavioral terms may be mitigating factors.

Each parent's teaching strategies must be considered in relation to the other parent's beliefs and practices, in addition to factors of number and spacing of children. Parents may share beliefs with one another, and thus influence each other's constructions of child development. Similarly, one's behaviors may be directly affected by the behavior of the spouse. For example, if a particular strategy is observed to work for one parent, the other parent may adopt a similar strategy as a result of this feedback from the spouse's interactions with the children.

The final component of this project is the relationship between parental behaviors and children's representational competence. Characteristics of representational competence and the kinds of mental operations involved in representational thinking abilities have been discussed (p. 21). In general, it was hypothesized that children's competence in tasks requiring memory, anticipation and symbol transformation should be related to levels of distancing strategies employed by parents. Children coming from homes where parents use such strategies will have had experience in predicting, planning, and drawing inferences. Children whose parents emphasize didactic instruction have had less opportunity to engage in such mental operations since parents tend to explain rather than encourage representational thinking on the child's part.

However, each parent uses his or her own distancing pattern and effects on the child are not conceptualized as additive. From the child's perspective, parental strategies may vary in consistency, complexity and contradictions. The child is in the position of having to integrate information from the two parents' styles of interaction. Thus, a path model involving relative contribution of each parent to child outcomes, as well as family constellation, socioeconomic status and parental beliefs, was designed (see Figure 1). In essence, we propose that parents' teaching behaviors affect the child's development and these behaviors stem from child development beliefs. A parent's beliefs are affected by family constellation, socioeconomic status, beliefs and behaviors of one's spouse and also the parent's own child's abilities.

In this overview, three classes of familial variables thought to influence the development of representational competence in preschool children were discussed. One class includes family structure variables, e.g., socioeconomic status, family size, child spacing, sex of parent and child; the second class includes parental beliefs and the third, parental distancing strategies. It is this last set of variables that form the central thrust of family influence on representational abilities since they refer to the behaviors that touch the child directly. However, these distancing behaviors are expressions in part of the parents' belief systems which are highly dependent on the nature of the family system.

Chapter II

Method

Design

The aim of this study was to assess the relation between five sets of variables: (1) family constellation, (2) income and education level, (3) parental beliefs, (4) parental childrearing practices, and (5) children's representational competence. The first two sets of variables, which include the number, spacing, and sex of children in the family, and parental income-education level, are the independent variables of the study. The major dependent variable is the child's cognitive level, i.e., the child's level of problem-solving ability. Two classes of mediating variables, which can be construed as both independent and dependent variables, are also included. The first class of mediating variables consists of measures of parental beliefs. These are dependent variables in the sense that parental beliefs are hypothesized to be affected by family configuration and SES. Parental beliefs are also independent variables in that they are conceptualized as the source of parental childrearing practices. These parental childrearing practices or behaviors comprise the second class of mediating variables. As dependent variables, parental practices are influenced by parental beliefs. As independent variables, these parental behaviors ultimately impact the child's cognitive development. Therefore, under investigation in this study are (1) the impact of family configuration and parent education-income level on parental beliefs, (2) the relationship between these beliefs and actual parental practices, and (3) the effect of parental practices on children's problem-solving abilities.

Implementation of the study necessitated a research design that enabled evaluation of the influence of several family constellation factors on parent and child. One- and three-child families were chosen to provide a comparison of only children and middle children and large and small families. In order to examine the effects of child spacing, the age difference between the oldest and middle child was less than three years for half of the three-child families and was greater than three years for half of the three-child families. The three year spread was selected to represent far spacing because the oldest and middle children, at the ages of interest in this study, are in different developmental phases of intellectual growth according to developmental theories such as the one proposed by Piaget. Finally, half of the families in each of the three family subgroups were characterized as low income-education while the remaining families were identified as middle income-education.

Subjects

One hundred and twenty-two parent families residing within a fifty mile radius of Princeton, New Jersey participated in the study. All of the families were volunteers who were paid \$25-\$40 for their participation. Volunteers were solicited through newspaper ads, public school systems, library story hours, labor unions, pediatrician offices, notices in apartment complex laundry rooms and in children's clothing and toy stores.

In accord with the research design, 40 families consisted of an only child aged 3½-4½ years and 80 were three-child families with a middle child aged 3½-4½ years. In the latter group, half of the families had fewer than three years spacing between the oldest and middle children and half had greater than three years spacing between oldest and middle children. Within each of these three family types, half of the families were working class and half were middle class as defined by parental educational and income levels.

In addition, there were an equal number of families with male target children and with female target children in each family type-social class group. Whenever possible, the oldest and middle child in the three-child families were the same sex. Sex of the youngest child and number of years spacing between the middle (target) and youngest children in the three-child families were not controlled in selecting the families.

Finally, families in which the target child had little or no experience in structured settings such as nursery school, daycare, play groups, etc., as well as families in which only one parent worked outside of the home on a regular basis were recruited. These selection criteria were imposed to ensure that primary adult impact on the child was from the parents and not from substitute caregivers.

In summary, this investigation involved an intensive study of a relatively small and select group of families, in order to obtain detailed information about the interrelations of parental beliefs, practices, and child problem-solving competencies in three family types within each of two socioeconomic classes. A description of the population and demographic characteristics of each group of families comprising the final sample is presented in Table 2.

Measures and Variables

A variety of instruments were utilized in this study to assess parents' childrearing beliefs, behaviors with their children, and children's level of development with respect to different cognitive processes. Parents completed questionnaires,and were interviewed extensively. Each parent was

Table 2

Configuration of Participant Families

Demographic and Population Characteristics	Family Constellation, Socioeconomic Group and Sex of Target (Preschool) Child [a]											
	One-Child Families				Three-Child Families with Near Spacing				Three-Child Families with Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child
Father's income: Thousands per year (Mean and S.D.)	15.00 (4.69)	13.80 (4.44)	20.60 (4.70)	19.10 (4.07)	13.30 (4.08)	18.20 (3.49)	18.50 (6.15)	20.70 (3.77)	12.90 (4.12)	16.90 (3.93)	22.80 (3.01)	21.80 (3.49)
Mother's income: Thousands per year (Mean and S.D.)	1.30 (1.64)	3.40 (3.20)	.60 (.97)	1.50 (1.58)	1.10 (1.66)	1.90 (2.69)	.20 (.63)	.60 (.97)	.40 (.84)	1.20 (2.53)	1.40 (3.13)	.20 (.63)
Family income: Thousands per year [b] (Mean and S.D.)	16.30 (4.52)	16.70 (6.31)	21.20 (4.16)	20.60 (4.38)	14.40 (3.86)	20.10 (4.58)	19.00 (6.09)	21.30 (3.20)	13.30 (4.06)	18.10 (4.41)	24.00 (4.99)	22.00 (3.74)
Father's educational level [c]	12.90 (1.29)	12.50 (1.72)	16.20 (1.14)	16.70 (1.70)	12.70 (.82)	12.70 (.95)	17.20 (1.99)	15.90 (.32)	12.50 (1.84)	13.80 (1.99)	17.20 (1.69)	17.20 (1.87)
Mother's educational level	12.20 1.23	12.40 (.97)	15.00 (1.41)	14.20 (1.75)	12.10 (.32)	12.10 (.99)	15.20 (1.62)	14.50 (1.65)	12.10 (.32)	12.60 (1.08)	15.30 (2.21)	14.70 (2.41)
Family educational level [d]	12.55 (.72)	12.45 (.86)	15.60 (.97)	15.45 (1.36)	12.40 (.39)	12.40 (.66)	16.20 (1.46)	15.20 (.82)	12.30 (.95)	13.20 (1.38)	16.25 (1.75)	15.95 (1.76)
Father's age [e] (years)	32.50 (6.43)	31.00 (4.83)	34.10 (7.14)	33.10 (5.49)	33.50 (4.38)	30.50 (3.54)	32.50 (1.58)	32.00 (3.16)	31.00 (3.50)	30.50 (2.64)	31.50 (2.42)	34.50 (2.42)
Mother's age (years)	29.50 (3.37)	28.50 (3.69)	31.00 (4.22)	30.50 (5.40)	32.00 (3.94)	27.50 (3.69)	31.00 (2.58)	31.00 (3.50)	30.50 (3.54)	29.00 (2.11)	30.50 (2.64)	33.50 (3.69)
Work hours outside home by primary caregiver [f] (Mean and S.D.)	3.50 (5.32)	9.15 (13.98)	3.80 (7.73)	2.15 (4.78)	2.00 (6.32)	2.40 (6.31)	0.00 (0.00)	1.40 (3.78)	0.00 (0.00)	6.00 (13.50)	2.00 (4.45)	1.00 (3.16)

Table 2 (Continued)

	Family Constellation, Socioeconomic Group and Sex of Target (Preschool) Child											
	One-Child Families				Three-Child Families with Near Spacing				Three-Child Families with Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
Demographic and Population Characteristics	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child
Time spent by target child in structured settings outside home (Mean and S.D.)[g]	93.00 (128.41)	102.10 (167.70)	123.00 (106.25)	69.00 (89.50)	33.00 (104.36)	12.00 (28.98)	105.00 (104.16)	126.00 (97.78)	33.00 (104.36)	66.10 (153.14)	210.10 (140.93)	108.00 (88.54)
Target child's age in months (Mean and S.D.)	48.80 (4.37)	47.50 (2.95)	47.10 (2.42)	48.80 (1.75)	50.70 (4.88)	51.30 (2.95)	48.50 (3.69)	49.30 (3.20)	49.20 (3.71)	48.00 (4.59)	50.70 (2.98)	47.00 (2.45)
Months spacing between oldest and middle children (Mean and S.D.)	- -	- -	- -	- -	26.50 (4.97)	20.00 (6.24)	27.00 (6.36)	25.30 (5.98)	43.40 (6.75)	46.30 (6.46)	46.50 (13.74)	44.50 (11.37)
Male oldest child	-	-	-	-	9	3	10	0	8	5	8	1
Female oldest child	-	-	-	-	1	7	0	10	2	5	2	9
Oldest child's age in months (Mean and S.D.)	- -	- -	- -	- -	77.10 (4.33)	71.30 (6.02)	75.60 (7.11)	74.60 (7.57)	92.60 (8.95)	94.00 (8.19)	97.30 (13.88)	91.80 (10.63)
Months spacing between middle and youngest child (Mean and S.D.)	- -	- -	- -	- -	29.60 (9.66)	26.80 (11.21)	29.50 (11.97)	36.70 (9.88)	29.60 (11.26)	25.40 (8.29)	35.10 (8.79)	30.70 (9.24)
Male youngest child	-	-	-	-	6	4	3	8	4	6	7	4

Table 2 (Continued)

	Family Constellation, Socioeconomic Group and Sex of Target (Preschool) Child											
	One-Child Families				Three-Child Families with Near Spacing				Three-Child Families with Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
Demographic and Population Characteristics	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child	Male Target Child	Female Target Child
Female youngest child	-	-	-	-	4	6	7	2	6	4	3	6
Youngest child's age in months (Mean and S.D.)	- -	- -	- -	- -	20.90 (11.53)	24.50 (12.53)	19.10 (11.36)	12.60 (8.15)	19.50 (12.81)	22.60 (8.11)	15.60 (9.44)	16.60 (10.05)

[a] Number of families per cell = 10.

[b] Family income = Father's yearly income and mother's yearly income at time of testing. The high incomes of multiple-child working-class families with a female target child is attributable to the inordinately high incomes of a few families. Educational level was weighted more highly in defining social status.

[c] Educational level = Number of years of formal schooling.

[d] Family educational level = (Number of years schooling for father + number of years schooling for mother)/2.

[e] Age of parents was indicated by checking off categories consisting of 3 year intervals; midpoint of intervals was used for this analysis.

[f] Work hours by primary caregiver excludes hours when spouse cares for child.

[g] Child's time spent in a structured setting = Hours per week x number of weeks enrolled. Although these figures may seem high, they do indicate that children were enrolled in a preschool or daycare setting only a very small amount of time per week.

also observed interacting with their child on two tasks. Children were administered a total of seven tasks designed to assess different aspects of representational thinking. Each measure yielded many variables, resulting in corpus of data too large to deal with appropriately for the 120 families included in the design. Therefore, preliminary analyses were conducted to reduce the number of variables that would be used to investigate the relationship of family constellation to the parent and child measures. The final set of variables included in this study were those for which significant intercorrelations or variation with demographic characteristics were obtained. It is this final set of selected variables that will be presented in this section.

Parent Questionnaires and Interviews: Parental beliefs were assessed with the Communication Belief Questionnaire and Interview Schedule (CBQI). The CBQI consists of five parts that assess (1) communication strategy preferences, (2) beliefs about child development processes, (3) beliefs concerning the impact of family constellation on the child, (4) perceived sources of childrearing beliefs, and (5) reports of changes in beliefs and practices. A brief description of the content and the variables used in analyses are presented separately for each portion of the CBQI in the section below.

(1) Communication strategy preferences were elicited through a questionnaire and an interview concerning responses to the questionnaire. The items comprising the questionnaire, and subsequently discussed during the interview, are 12 hypothetical situations in which a parent and preschool child interact within the context of a situational problem or critical incident.

Each of the 12 situations is followed by four response options in the questionnaire. The responses vary in the extent to which an explicit demand is made for the child's active problem-solving involvement, i.e., distancing. Although response options presented in questionnaire form cannot fulfill all of the requirements of distancing behavior described by Sigel (Sigel, 1971; Sigel & Cocking, 1977), one response option always contains the highest potential for a distancing experience for the child, followed by the three other options. These three options vary in the extent to which they fulfill the criteria for distancing.

Administration of the questionnaire consisted of presentation of a booklet with instructions to rank each of the five response options for each situation from best (#1) to worst (#4) ways to handle the situation. No time limitations were imposed. Immediately upon completion of the questionnaire, the interview was administered. For each situation, the parent was first asked to state what (s)he thinks is the best way to handle the situation (Preferred strategy). The parent was told that responses not included in the questionnaire can be introduced at any time. A number of probes aimed at eliciting parental rationales underlying this strategy were then administered. Next, parents were asked to predict how they would really handle such a situation with their own child (Predicted I) and rationales were again elicited. Finally, the parent was asked to predict what they would do if their first strategy failed (Predicted II) and to provide a rationale for that response.

This portion of the interview yielded frequency scores for the following variables: (1) Preferred/Predicted I and Predicted II strategies (Distancing, rational authoritative, direct authoritative, diversion, activity with child, authoritarian behavior, passivity, other); (2) Childrearing goals (Cognitive, personal-social, physical, child management, assessment, nonchild); (3) Temporal focus (active, passive); (4) Childrearing orientation (Parent, child, parent role, other); (5) Situational constraints (Parent, child, setting, other). In order to control for the fact that many parents referred to more than one goal, orientation and constraint, frequencies obtained for each category were divided by the total number of goals, orientations and constraints referred to by each parent. The specific items, probes, scoring definitions and reliability estimates are described in the Communication Beliefs Administration and Coding Manual (Appendix A).

(2) Beliefs about child development processes were assessed through 22 sets of probes that refer to the content of the 12 situations used to elicit communication strategies. Each set of probes consists of initial questions aimed at establishing the parent's view of the preschool child's developmental level or capabilities (e.g., "Does a four-year-old understand time?") and then follow-up questions aimed at eliciting the parent's view of developmental and learning processes (e.g., "How does the child come to understand time?"). The particular content of the probes (time concepts in this instance) is derived from issues raised in the questionnaire situations but the focus of this set of probes is always upon the manner in which the child attains some concept or skill. A series of questions comprising the sets of probes are specified for each of the 12 situations from which their content is drawn. The probes were administered separately for each situation after preferred and predicted strategies for that situation have been discussed.

Forty-six constructs derived from parental responses and psychological theories of child development were initially used for coding. Results of correlational analyses led to reduction of the 46 constructs to 27 constructs, which are defined in Appendix A.

(3) Parental beliefs about family constellation were assessed through questionnaire items and a brief interview. Questionnaire items were appended

to the face sheet and required parents to indicate their beliefs about ideal family size and child spacing. Parents were also asked to provide a brief statement of their reasons for considering such a family as ideal. The interview, which occurs after communication strategies and child development constructs have been discussed, focused on similar issues. The parent was first asked whether they think family size has an effect on the child's development, and why and how (or why not). The same questions were then asked relative to child spacing and to ordinal position. Parents were also asked to indicate which ordinal position in which particular family constellation they would have preferred for themselves and why.

Each family structure variable was considered independently for coding purposes. Ideals stated for number of children, child spacing and birth order were simply recorded. The effect of each family structure variable was coded according to particular aspects of the child that are affected (e.g., cognitive, social, etc.) and whether effects are positive or negative. Each type of effect mentioned by the parent was entered in checklist fashion during coding.

(4) Perceived sources of the parent's own childrearing beliefs were assessed with a Likert-type (0-3) scale in which six variables (e.g., own upbringing, expert advice, etc.) were listed. The parents indicated how much each has affected them by checking off numbers on the scale next to each variable. Several interview probes that elicit parental descriptions of experiences that have had a major impact on their ideas about raising a child were also administered. Parents' responses were coded according to the same Likert scale used by parents by independent scorers.

(5) The final portion of the CBQI consists of an interview in which modifications of beliefs and childrearing practices that may have occurred with changes in family structure are discussed. Three of the 12 hypothetical

situations were presented again, and the parent was asked how (s)he would respond if the target child's sibling were involved. Changes in beliefs about child development processes, in parental time of involvement with the child(ren) and reports of similarities and differences between siblings were also elicited.

Parents' responses to probes concerning communication strategies with the target child's sibling were coded according to the same eight categories used to code communication preferences and predictions for the target child. A notation was made as to whether the strategies predicted for the two children were categorically the same or different. Verbalizations concerning amount of change in child development beliefs were coded according to a Likert-type (0-3) scale. Responses to interview items pertaining to changes in parental time of involvement were coded first for changes in total amount of time spent with children as new births occurred (decreased, no change, increased), and secondly for changes in amount of time with the target child that occur with a subsequent birth. Changes in time with the target child were coded according to 4 categories: (1) Form change (e.g., interact as a group rather than as a dyad, (2) Other parent (e.g., one parent is spending less time but compensated by increase in time with other parent), (3) Substitute time (e.g., child plays with friends, siblings, more now than previously), (4) Other. Parents discussions of similarities and differences between children in the family were coded for content (e.g., personality, cognitive, etc.) and for rationale for similarities/differences (e.g., genetics, environment, etc.). For more detail regarding the questionnaire and interview the reader is referred to the Communication Beliefs Administration and Coding Manual.

Child Assessments: Seven tasks were used to assess the child's representational abilities and problem-solving competence. Four of these were related to knowledge of the physical world. Three of these "physical cognition" tasks are directly derived from the work of Piaget (1952, 1971) (conservation of continuous quantity, kinetic anticipatory imagery, static reproductive imagery) and the fourth is a classification task called the Object Categorization Test (Sigel, Anderson & Shapiro, 1966). The other three tasks are related to knowledge of the social world and are administered using an interview technique. These tasks deal with the child's conception of friendship, understanding of rules and conventions, and types of strategies produced in solving interpersonal problems (a modification of the PIPS, Spivak & Shure, 1974). Each of these seven tasks will be briefly described below. Specific administration, scoring procedures and reliability estimates are presented in Appendix B.

Static Reproductive Imagery (SRI)

This task assessed reconstructive and recognitory memory. The child was required to remember the configuration of seven blocks that varied in shape and color and were placed in a row on a low table. Reconstructive memory was assessed by having the child rebuild the array. Recognitory memory was indicated by the child's selection of an array from five different options.

Dependent variables for this task were: (1) time in seconds that the child used to reconstruct the array, (2) total number of correct placements of the blocks in the reconstruction, (3) number of pairs of blocks placed in the correct sequence with respect to one another, and (4) success in selecting the correct array from the recognition items.

Kinetic Anticipatory Imagery (KAI)

This task assessed the child's anticipation of the outcome of rotation of a square that was attached to another square by a pivot screw. Four rotations of one square were indicated--90^o, 180^o, 225^o, and 360^o--while the other square remained stationary. The child indicated what s/he thought the square would look like after each rotation by pointing to one of five options presented on a choice board. The child also indicated where the pivot screw would be by pointing to the choice board.

The child's performance was scored for number of selections of correct outcomes over the four trials and for maintaining the correct anchor point (correct screw placement).

Conservation of Continuous Quantity

In this task, the experimenter presents two beakers, each containing 50 ml of colored liquid, to the child. After the child agrees that there is the same amount of "juice" to drink in each glass, a tall thin cylinder is presented. The experimenter pours the liquid from one beaker into the cylinder and asks the child if there is the same amount to drink in the cylinder as in the beaker and why. The liquid is then poured from the cylinder into the beaker and the child is again asked if there is as much to drink as there was in the cylinder. The dependent variable for this task was the number of times (0-2) the child responded that amount to drink had not changed.

Object Categorization Task

Ten trials comprised this task. The same 12 items were used for all trials. The experimenter selected one of the items and asked the child to get all of the other items that were the same or like the one the experimenter placed aside. The child was then asked why the items went together.

Children's performance was scored in two ways. First, the number of logical groupings was recorded across the ten trials. Second, the child's rationale for the collection was coded as representing either (a) no classification rationale, (b) classification based on descriptive characteristics such as form, color, etc., or (c) classification based on function such as eating things, smoking things, writing, etc.

Rules and Conventions

Children's understanding of rules and conventions was assessed with a verbal interview consisting of eight items. Each item began with a probe designed to elicit the child's knowledge of existence of a social rule or norm (e.g., "Is it all right/OK to take someone's bike without asking?"). For half the items, the "correct" answer was yes, and for half it was no. After the child responded, the experimenter probed for a rationale for the rule or convention.

Responses were coded separately for knowledge of the rule and for rationales underlying rules. Knowledge of rules and conventions was indicated by the sum of "correct" answers over the eight items. Rationales for rules and conventions were coded as high level (based on rational principles or normative consensus) or low level (based on physical, authority, i.e., punishment, nominal affective or idiosyncratic reasons).

Concept of Friendship

Children were asked to describe their friends and to provide a definition of a friend, as well as indicate whether a friendship would continue under a variety of conditions (such as hitting, playing with another, moving far away). Children's definitions were coded as representing high levels (i.e., based on reciprocity, shared needs, personality of other) or low levels (i.e., physical such as "lives nearby," affective such as "like him," behavioral "she plays with me").

Interpersonal Problem Solving

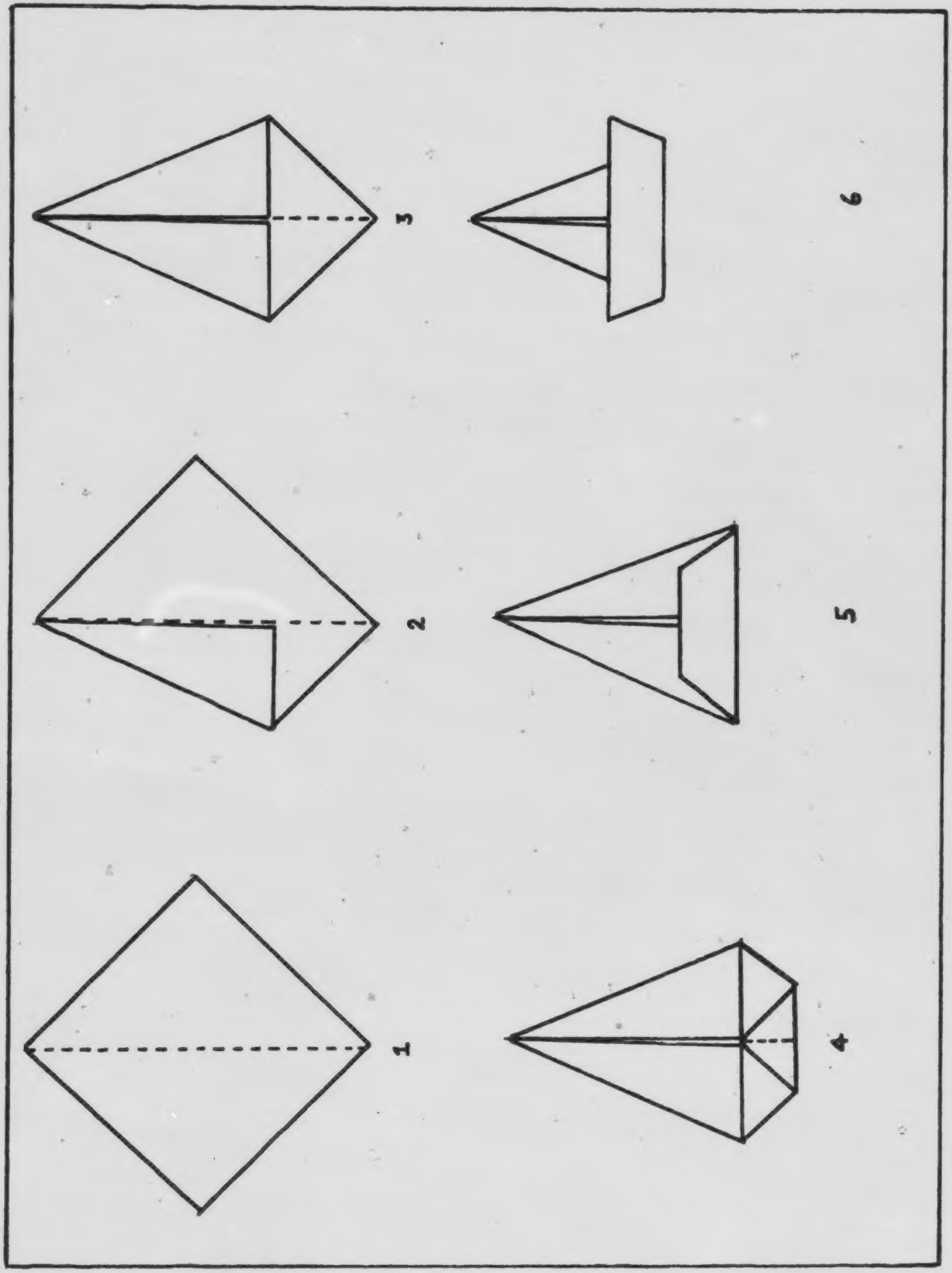
Eight situations between friends were acted out using dolls. In half the situations, the "friend" had an object the child wanted and in the other half the "friend" did not know how to play a game the child wanted to play. Children's strategies for resolving the situation were coded as "engaging," "aggressive," "direct telling," "withdrawal from the interaction" or "demonstration/participation," and frequencies for each category were then summed across the eight situations.

Parent-Child Observations: Each parent performed two tasks with each child included in the study. One task was a storytelling task and the other task was an origami (paper-folding) task. These tasks were selected in order to sample parental behavior in situations that vary with respect to amount of structure in the task and focus on verbal versus spatial task requirements. The stories were edited versions of popular children's books. Each book had a comparable theme which involved all the possible ways some object could be used. The stories were Hello Rock (R. Bradfield) and A Rainbow of My Own (D. Freeman). One story was assigned to each parent.

The materials for the paper-folding tasks involved a 40" x 30" rectangular board. Each step of the folding process was represented on this board by an actual piece of 8½ x 8½ white paper folded in the appropriate manner (see Figure 2). Each step was presented in sequence and each step was numbered. This procedure was adapted from the work of Croft, Stern, Siegelbaum & Goodman (Note 2). A stack of 8½ x 8½ paper was also provided. Children constructed

Figure 2

Diagram of Paper Folding Task Display Board



a boat with one parent and a plane with the other parent. Each task had the same number of steps and the same number of horizontal and vertical versus diagonal folds. Order of administration to tasks was counterbalanced for story-paper and mother-father across families.

In addition to the materials needed to complete each task, a toy telephone was placed on the table in the upper-right corner. The telephone was included to distract the child, in order to obtain spontaneous measures of parental management and structuring of the task when a child becomes distracted. A telephone was chosen because it is relatively unloaded with respect to sex bias as a plaything and most preschool children are immediately drawn to it.

Each parent-child interaction was coded separately, yielding two sets of scores for each dyad--one for the structured teaching (origami) task and one for the semistructured (story) task. In accord with the hypotheses of the study, the coding system is focused primarily on parental utterances and nonverbal behaviors, although some aspects of the child's behaviors are included in the coding categories.

Four aspects of parental behaviors were coded: (1) distancing strategies (teaching behaviors), (2) structuring and management behaviors, (3) verbal emotional supports and feedback, (4) nonverbal parental behaviors that serve task facilitation or as emotional supports. Children's behaviors were coded for degree of engagement in the interaction and task. Examples of responses for each category are presented in Table 3. Coding categories and interrater reliabilities are reported in Appendix C.

Table 3

Examples of Parent-Child Interaction Variables Coded with PCI

Aspect of the Interaction	Variables
Teaching/Management Demands	Mental operational demands placed on the child by the parent to propose alternatives, describe, evaluate consequences, etc. (teaching) or power assertion, persuasion, structuring tasks, etc. by the parent (management)
Verbal Emotional Support System	Approval, Disapproval, Approval with task facilitation, Qualified approval, Correction, Informational feedback, Reflection, Disapproval with task facilitation, Qualified disapproval, Informational feedback with elaboration evidenced by parent
Nonverbal Emotional Support System	Demonstration of positive physical affect, Demonstration of negative physical affect, Helping behavior, Takeover by parent
Form of Parental Utterances	Statement, Imperative, Fragment, Convergent question, Divergent question
Cohesion	Orient, Redirect, Divert, Out of contact, No time for child to respond
Child Engagement	Actively engaged with parent, Actively nonengaged with parent, Passively engaged with parent, Passively nonengaged
Child Performance	Total failure, Many mistakes and/or much physical parental assistance, Completed with few mistakes and some assistance, Correctly completed
Time	Total time from child entering room to task completion or 30 minutes

Procedures

Data collection required two contact sessions with each family at the Educational Testing Service Research Laboratory. Families had the option of coming together as a family for both sessions or having the mother come with the children for one session and the father come with the children for the other session. Once the selected family made this decision, the family was assigned to one of 12 schedules that serve to balance the order of task administration both within and between families.

For those families (n=80) who chose to have parents come separately to the two contact sessions, half of the mothers and half of the fathers were scheduled for the first contact session. Within this dichotomy, half of the parents were administered the interview first and the observational tasks second, and the other half performed these tasks in the reverse order. In addition, half the parents in each group were administered the observational tasks in the order story-origami and half in the order origami-story. The seven child assessments were divided into two groups which were administered separately in two sessions. Half the children were assessed on Group I assessments and half on Group II assessments during the first session.

Families who chose to come together (n=40) for both contact sessions were assigned to similar schedules, but the interview was administered to one parent and the observational tasks to the other parent in each session. During the second visit each parent was administered the task their spouse had performed in the prior visit. Order of observational tasks (origami-story, story-origami) and child assessments was varied systematically in the same manner as for families in which each parent came separately.

In addition to these stringent controls for order of task administration between families, tasks were balanced within each family. Thus, for each family, if the mother performed the story task and then the origami task in the observations, the father was administered the counterpart tasks in the reverse order. There were two story tasks and two origami tasks for each child so that the content of the task was new for both parent and child. Within each family, one parent was administered the interview before the observational tasks and the other parent performed the tasks in the reverse order.

Mothers and fathers were each administered the questionnaires and interviews individually by two of four females trained to conduct the interviews. The parent questionnaires and interviews took 2-3 hours to complete and all interviews were recorded on cassette tapes. Evaluation of children's problem-solving abilities was conducted in two 20-30 minute sessions less than three weeks apart by two of four independent research assessors. Children's responses were also recorded on cassette tapes. Parent-child interactions were videotaped through a one-way mirror by the research assistant assigned to assess the children in each particular session. Thus, four independent data collectors came into contact with each family--one for each parent interview and two for the child assessments administered to each family.

Parent interviews were coded by three scorers acting independently of one another, child assessments were coded by two other scorers and the parent-child observations were coded by six independent coders. Six coders were necessary for scoring observations as the coding system was quite complex. The entire interaction was coded for each parent-child dyad. Since the length of interactions varied considerably, the final data set was complied by sampling 20 units of interactions from each protocol. The 20 units included the first and final parental behaviors and 18 units sampled in one-twentieth intervals of the entire length of interaction. This was necessary in order to establish a uniform base of interactions across all families.

Chapter III

Data Analyses

The first three sections of this chapter will focus on providing a description of the different family types in terms of (1) children's performance on the cognitive assessments, (2) parental beliefs assessed through the interview schedule and (3) parental behaviors when parents were observed interacting with their child on two tasks. Results of descriptive procedures such as analysis of variance will be reported. In addition, the second section which focuses on parental beliefs will include data pertaining to the magnitude of relationships between beliefs and behaviors. The third section, which deals with descriptions of parental behaviors, will also include information relating parental practices to child assessments and differences in behaviors that occurred with the two observation tasks. Thus information derived from traditional correlational methods, including regression analyses will be presented in the second and third sections.
designed to provide causal statements regarding the impact of parental beliefs, mediated through parental practices, on the child's cognitive functioning. An attempt was made to include the influence of the child on parents. Path models incorporated constructs of family size, child spacing, parental income and education in order to test for different degrees of relationships in family influence based on these factors.

A vast data corpus was generated to answer the basic questions of this research. This necessitated data reductions so that a manageable data set could be developed. Correlational techniques were employed in order to base data reduction on empirical results as well as theoretical considerations as a first level of analysis. Both composite and discrete measures were included in the subsequent analyses, which are presented in this section. In some cases it was necessary to transform the data into proportion scores in order to control for amount of verbalization and formation of composite scores by addition. In the case of the observational data, 20 units of behavior were sampled at equal intervals throughout the interaction in order to maintain a uniform base of units of interaction across all families. Twenty units were selected because the shortest interaction obtained was that length.

Descriptive Analysis of Child Assessments

As previously stated, a major purpose of this research was to investigate whether differences in children's representational competence occur with family configuration variation, and further, the degree to which such differences are due to differential parental practices. A first step in answering this question was to establish whether children from each of the three family constellation groups (only child; near spacing; far spacing) could be differentiated from one another on the basis of scores on the child assessments, and which measures provided such a discrimination between groups. To accomplish this objective, a stepwise discriminant function analysis was computed on the child assessment variables. Two significant functions were obtained. These functions are presented in Table 4. Nine variables were necessary to accomplish the discrimination. As indicated in Table 4 (group centroids), children from near- and far-spacing families were similar to one another on the first function, and differed from only children. This function was mainly comprised of withdrawal interpersonal strategies (Interpersonal Problem-Solving task), number of categorizations based on descriptive characteristics (Categorization Sorting task), and frequency of reconstructing correct sequences of pairs of blocks (Static Reproductive Memory task). Note

Table 4

Summary of Discriminant Analysis Results of Differences Between Children from Three Family Constellation Groups on Selected Child Assessment Variables

Function	Eigenvalue	Percent of Variance	Canonical Correlation	Wilks Lambda	Chi-Squares	D.F.	Significance
1	.25	62.65	.45	.70	40.97	18	.002
2	.15	37.35	.36	.87	15.72	8	.05

Standardized Canonical Discriminant Function Coefficients

	Function 1	Function 2
1. Correct judgments: Conservation task	.31	.40
2. Grouping based on descriptive characteristics: Categorization task	.57	-.03
3. Maintenance of anchor point: Kinetic anticipatory imagery task	-.29	-.29
4. Time to reconstruct array from memory: Static reproductive imagery task	.35	-.72
5. Tower building: Static reproductive imagery task	-.36	.16
6. Correct sequence pairs: Static reproductive imagery task	-.51	-.10
7. Correct recognition of array: Static reproductive imagery task	.11	-.49
8. Lower level definition of friendship: Friendship interview	-.40	-.29
9. Withdrawal strategies: Interpersonal problem solving task	.61	.01

Canonical Discriminants Functions Evaluated at Group Centroids

Group	Function 1	Function 2
Near child spacing	.38	.45
Far child spacing	.32	-.49
Only child	-.70	.02

that the memory variable loaded in the opposite direction from the prior two variables. Inspection of group centroids indicates that children from only-child families differed from others in their lower frequency of interpersonal strategies of withdrawal and of groupings based on descriptive characteristics of objects, and their greater frequency of success in reconstructing correct sequence pairs from memory.

The second function indicates that the three-family constellation groups could be differentiated on the basis of memory performance, i.e., time to reconstruct an array from memory and correct recognition of an array. Group centroids indicated that children from far-spacing families performed at the highest level for these variables, followed by children from only-child families and then children fron near-spacing families.

Thus, children from each of the three family constellation groups were differentiated from one another in terms of two classes of variables. It is interesting to note that the first function accomplished a discrimination based on family size, i.e., the children from only-child families differed from children in three-child families. The second function was consistent with Zajonc's confluence model, which posits that near spacing of children "dilutes" the intellectual environment of the home, and only children are at a disadvantage in learning interpersonal problem-solving skills with peers perhaps because they do not have a sibling to work with. Children from far-spacing families were highest on the function representing memory performance and children with near sibling spacing were lowest. The only child group was in between the near- and far-spacing groups.

Since many studies have yielded interaction effects between family constellation and socioeconomic factors (family constellation effects being more marked for families with lower SES backgrounds) discriminant analyses were also computed for the six groups formed by the SES and family constellation factors. Three functions, summarized in Table 5, were obtained. The variables contributing most to the first function were correct conservation predictions, maintenance of anchor points on a spatial transformation task, high level definitions of friendship and grouping based on descriptive characteristics. As Table 4 indicates, children from working-class near-spacing and from middle-class far-spacing families were somewhat similar on the first function, and were most differentiated from working-class far-spacing and middle-class only children.

The second function, composed largely of time to reconstruct an array from memory, differentiated children from working-class far-spacing families from the middle-class near-spacing and middle-class only child groups. The variables of withdrawal interpersonal strategies, reconstruction of correct pairs of objects in sequence, lower level definitions of friendship and higher level rationales for rules and conventions contributed to the third function. This function yielded greatest discrimination between working-class only child and middle-class near-spacing groups.

To summarize thus far, children in each of the three family constellation groups could be differentiated from one another on the basis of performance on the cognitive measures used in this study. When children were grouped on the basis of socioeconomic status as well as family type (six groups) more variance was accounted for, but the patterns of variables comprising these functions indicated that family constellation and SES interact in a complex manner to affect different aspects of children's development. For example, children from working-class near-spacing families and from middle-class far-spacing families were similar to one another and differed from other groups, performing at higher levels on active transformational tasks (conservation

Table 5

Summary of Discriminant Analysis Results of Differences Between Children from Six Family Constellation-SES groups on Selected Child Assessment Variables

Function	Eigenvalue	Percent of Variance	Canonical Correlation	Wilks Lambda	Chi-Squares	D.F.	Significance
1	.34	29.96	.51	.36	111.89	65	.000
2	.30	26.25	.48	.48	79.44	48	.003
3	.26	22.56	.45	.63	50.52	33	.03

Standardized Canonical Discriminant Function Coefficients

	Function 1	Function 2	Function 3
1. Correct judgments: Conservation task	.61	.34	.11
2. Grouping based on logical classes: Categorization task	.34	.11	-.38
3. Grouping based on descriptive characteristics: Categorization task	.45	-.03	.25
4. Correct anticipation of rotation outcome: Kinetic anticipatory imagery task	.09	.11	.03
5. Maintenance of anchor point: Kinetic anticipatory imagery task	-.71	.07	.15
6. Time to reconstruct array from memory: Static reproductive imagery task	-.11	-.56	.27
7. Tower building: Static reproductive imagery task	-.22	-.04	-.34
8. Correct sequence pairs: Static reproductive imagery task	-.01	.26	-.46
9. Correct recognition of array: Static reproductive imagery task	.32	.08	-.02
10. Lower level definition of friendship: Friendship interview	-.23	-.07	-.41
11. Higher level relational definition of friendship: Friendship interview	-.44	.19	.04
12. Withdrawal strategies: Interpersonal problem solving task	.14	-.16	.64
13. Higher level (logical) rationales for rules and conventions: Rules and conventions task	-.31	.63	.41

Canonical Discriminant Functions Evaluated at Group Centroids

Group	Function 1	Function 2	Function 3
Working class: Near child spacing	.83	-.30	.06
Middle class: Near child spacing	-.18	.67	.56
Working class: Far child spacing	-.57	-.94	.43
Middle class: Far child spacing	.65	.24	.15
Working class: Only child	-.02	-.14	-.95
Middle class: Only child	-.71	.47	-.25

and categorization) and at lower levels on maintenance of relations in the physical and social world (anchor point and relational definition of friendship).

While the discriminant analyses indicated that family constellation groups could be differentiated from one another, these analyses cannot be used to explicate the nature of the interactions between demographic variables, nor to provide a basis of comparison of group means. In addition, the variable of sex of child was not included in these analyses. In order to describe the children's performance in terms of group mean comparisons, and interactions between demographic variables including sex of child, a 3 (family constellation) x 2 (socioeconomic status) x 2 (sex of child) analysis of variance was conducted on 15 child assessment variables that were involved in the discriminant functions.[1] These analyses yielded significant effects for 10 of the variables (p's $< .05$). Means for each of these 10 variables are reported in Table 6 by family constellation, SES and sex of child. Scheffé's post hoc tests were conducted on means involved in all main and interaction effects.

Main effects for family constellation were obtained for time to construct an array from memory and frequency of withdrawal interpersonal strategies. Post hoc tests indicated that children from far-spacing families took longer to reconstruct the array than children in the other groups. Children from only child families posited fewer withdrawal strategies from the interpersonal problem-solving task than children from three-child families, regardless of spacing.

Family constellation was involved in two interaction effects. For number of conservation judgments, children from working-class far-spacing families made fewer correct conservation judgments than children from working-class near-spacing, middle-class only child and middle-class far-spacing families.

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[1] Since the study was an investigation of variation in parent and child behaviors that occurs with demographic and population characteristics, both parent and child variables were selected for subsequent analyses based on results indicating significant differences between groups for that variable.

Table 6

Mean (and S.D.) Responses on Child Assessment Variables by Family Constellation, Social Class and Sex of Child

Child Assessment Variables	Family Constellation, Social Class and Sex of Child																				
	One-Child Family							Three-Child Family with Near Spacing							Three Child Family with Far Spacing						
	Working Class			Middle Class				Working Class			Middle Class				Working Class			Middle Class			
	Females	Males	Total Working Class	Females	Males	Total Middle Class	Total Only Child	Females	Males	Total Working Class	Females	Males	Total Middle Class	Total Near Spacing	Females	Males	Total Working Class	Females	Males	Total Middle Class	Total Far Spacing
Frequency of correct predictions: Conservation task	.80 (.63)	.90 (.88)	.85 (.75)	[illegible] [illegible]	1.00 (.82)	.95 (.69)	.90 (.71)	1.50 (.53)	.90 (.74)	1.20 (.70)	1.10 (.57)	.90 (.57)	1.00 (.56)	1.10 (.63)	.50 (.53)	.60 (.52)	.55 (.51)	1.20 (.63)	1.00 (.67)	1.10 (.64)	.83 (.64)
Frequency of logical grouping: Categorization task	2.60 (1.96)	3.40 (2.84)	3.00 (2.41)	4.10 (3.38)	3.80 (1.87)	3.95 (2.67)	3.48 (2.55)	5.20 (2.35)	2.40 (2.07)	3.80 (2.59)	5.60 (2.80)	3.40 (2.46)	4.50 (2.80)	4.15 (2.69)	3.80 (2.25)	3.40 (1.96)	3.60 (2.06)	4.50 (3.24)	4.90 (2.38)	4.70 (2.77)	4.15 [illegible]
Frequency of groupings based on descriptive characteristics: Categorization task	3.50 (3.78)	2.40 (2.12)	2.95 (3.03)	3.20 (3.80)	3.10 (3.96)	3.15 (3.77)	3.05 (3.38)	4.30 (3.50)	2.10 (2.73)	3.20 (3.25)	5.30 (4.08)	5.80 (3.65)	5.55 (3.78)	4.38 (3.68)	4.70 (2.79)	3.00 (3.37)	3.85 (3.13)	3.80 (3.62)	6.90 (2.77)	5.35 (3.51)	4.60 (3.37)
Frequency of maintaining correct anchor point: Kinetic anticipatory imagery task	2.90 (.88)	2.40 (1.17)	2.65 (1.04)	3.20 (.79)	3.60 (.52)	3.40 (.68)	3.03 (.95)	2.60 (1.58)	2.20 (1.14)	2.40 (1.35)	3.60 (.52)	2.30 (1.34)	2.95 (1.19)	2.68 (1.29)	2.80 (.80)	2.90 (1.10)	2.85 (.93)	3.20 (.92)	2.60 (1.27)	2.90 (1.12)	2.88 (1.02)
Time in seconds to reconstruct an array: Static reproductive imagery (memory) task	137.70 (77.49)	111.10 (79.28)	124.40 (77.51)	117.20 (59.83)	80.40 (37.86)	98.80 (52.26)	111.60 (66.52)	99.70 (50.74)	139.30 (63.31)	119.50 (59.42)	113.60 (59.19)	92.10 (50.87)	102.85 (54.84)	111.18 (57.06)	243.10 (272.97)	177.40 (53.06)	210.25 (194.33)	139.30 (75.19)	123.60 (61.90)	131.45 (67.51)	170.85 (149.03)
Tower building: Static reproductive imagery (memory) task	.20 (.42)	.10 (.32)	.15 (.37)	.20 (.42)	0.00 (0.00)	.10 (.31)	.13 (.34)	.10 (.32)	0.00 (0.00)	.05 (.22)	.10 (.32)	.10 (.32)	.10 (.31)	.08 (.27)	.20 (.42)	0.00 (0.00)	.10 (.31)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	.05 (.22)
Frequency of passive strategies: Interpersonal problem-solving task	.40 (.52)	.20 (.42)	.30 (.47)	1.00 (1.05)	.90 (.99)	.95 [illegible]	.63 (.84)	1.80 (1.23)	.70 (.82)	1.25 (1.16)	.80 (1.14)	1.40 (1.90)	1.10 (1.55)	1.18 (1.36)	1.40 (1.17)	1.10 (1.37)	1.25 (1.25)	1.20 (1.23)	1.20 (1.40)	1.20 (1.28)	1.23 (1.25)
Frequency of engaging strategies: Interpersonal problem-solving task	3.50 (2.12)	2.80 (1.75)	3.15 (1.93)	4.00 (1.33)	3.20 (1.69)	3.60 (1.54)	3.38 (1.74)	2.70 (1.89)	2.90 (1.85)	2.80 (1.82)	4.60 (1.43)	2.60 (1.96)	3.60 (1.96)	3.20 (1.91)	3.60 (1.96)	2.30 (1.64)	2.95 (1.88)	3.80 (1.75)	3.60 (2.37)	3.70 (2.03)	3.33 (1.97)
Frequency of predicted effectiveness of strategy: Interpersonal problem-solving task	5.00 (2.49)	4.50 (1.90)	4.75 (2.17)	6.40 (.84)	4.90 (2.28)	5.65 (1.84)	5.20 (2.04)	4.90 (1.52)	3.50 (1.78)	4.20 (1.77)	6.00 (2.16)	4.20 (1.99)	5.10 (2.22)	4.65 (2.03)	4.90 (2.23)	5.00 (2.00)	4.95 (2.06)	5.10 (1.97)	5.60 (1.51)	5.35 (1.73)	5.15 (1.89)
Frequency of responses consistent with societal rules and conventions: Rules and conventions task	6.60 (1.65)	6.40 (1.43)	6.50 (1.50)	7.50 (1.27)	6.70 (1.83)	7.10 (1.59)	6.80 (1.56)	5.50 (2.12)	6.70 (1.25)	6.10 (1.80)	7.70 (.68)	7.20 (.92)	7.45 (.83)	6.78 (1.54)	6.30 (1.95)	6.50 (1.43)	6.40 (1.67)	6.90 (.88)	7.20 (1.40)	7.05 (1.15)	6.73 (1.45)
Frequency of statement of a rationale underlying rules and conventions: Rules and conventions task	2.37 (1.95)	2.00 (2.36)	2.18 (2.11)	4.10 (2.89)	3.03 (2.36)	3.57 (2.62)	2.88 (2.45)	2.16 (2.12)	1.80 (1.62)	1.98 (1.84)	5.27 (1.84)	3.80 (1.14)	4.53 (1.67)	3.26 (2.16)	3.00 (2.11)	2.37 (2.44)	2.68 (2.24)	2.60 (1.43)	3.60 (2.46)	3.10 (2.02)	2.89 (2.12)

A family constellation x child sex interaction was obtained for the number of logical groupings generated on the object categorization task. Female children in near-spacing families generated fewer logical groupings than other children.

These findings indicate that one particular family constellation does not necessarily provide an advantage for children's development over all the others. Effects appear to vary, and some are positive and some negative, relative to other types of families. For example, only children differed from children with siblings in use of withdrawal strategies in interpersonal situations. But only children did not differ from other groups on other tasks. Some children with near spacing between siblings (females) performed at lower levels on the categorization task, but other children with far spacing (working class) performed less well on a task measuring conservation concepts.

The analyses of variance also yielded effects involving socioeconomic status and sex of child independently of family constellation. A main effect favoring children from middle-class homes was obtained for number of logical groupings on the categorization task, number of groupings based on descriptive characteristics, maintenance of anchor points on the anticipatory imagery task, use of engaging interpersonal problem-solving strategies, predicted effectiveness of interpersonal strategies, knowledge of rules and conventions and rationales underlying rules and conventions. In addition, children from working-class backgrounds evidenced greater time scores in reconstructing an array from memory (p's $< .05$). For number of groupings based on descriptive characteristics, the SES main effect was subsumed under a significant interaction involving sex of child. Post hoc tests indicated that working-class males based groupings on descriptive characteristics less frequently than middle-class male children.

Three significant main effects for sex of child were also obtained. Females were correct more often than males in maintaining anchor points on the anticipatory task, generated engaging interpersonal strategies and predicted effectiveness of interpersonal strategies more often than male children.

Results of analyses of child assessment data have yielded significant findings related to variables of interest in this study. Patterns of relationships between parent and child that could clarify the nature of differences found in children from different types of families will be explored in the sections dealing with parental behaviors and the path model of the family.

Descriptive Analysis of Parental Beliefs

Results of analyses of data obtained from administration of the Communication Beliefs Interview will be presented in this section. As reported in Chapter II, the CBQI consisted of five parts: (1) beliefs about child development states and processes (construction of the child), (2) communication strategy beliefs, (3) beliefs about family constellation, (4) perceived sources of childrearing beliefs, and (5) reports of changes in beliefs and practices that occur with parenting experience.

Descriptive procedures, such as analysis of variance, were conducted first, in order to characterize differences in childrearing beliefs that occurred for the subgroups of particular interest to this study. Secondly, the magnitude of relationships between measures of different types of beliefs and between parental beliefs and behaviors was investigated. Simple correlations and regression analyses were utilized for this phase of data analysis.

The organization of this section on results pertaining to parental beliefs will reflect the data analysis strategy. That is, data that provide a description of differences between family groups in terms of each of the five sets of belief variables will be presented first, followed by reports of obtained relationships between groups of measures.

Description of differences between groups: Data pertaining to groups based on family constellation, socioeconomic status, parent sex and child sex will be reported separately for each portion of the CBQI. Given that the nature of the data obtained from different portions of the CBQI varied, both parametric and nonparametric tests were used, depending on the nature of the scores.

Parental constructions of the child

A 3 x 2 x 2 x 2 (family constellation x SES x parent sex x child sex) analysis of variance was applied to frequencies for each of 27 constructs. Significant effects were obtained for 17 of the variables (p's < .05).[1] Mean (and S.D.) numbers of parental references to these 17 constructs are presented in Table 7 by sex of parent, family constellation, SES and sex of child. Scheffé tests were conducted on means involved in all main and interaction effects. Significant main effects for family constellation will be presented first (numbered 1-4 below), followed by family constellation x SES interactions (#5-#8), family constellation x sex of parent interactions (#9, #10), family constellation x sex of child (#11) and fimally three-way interactions (#12-#14).

(1) Parents of an only child referred to negative feedback (an unpleasant state produced in the child which serves to motivate or inhibit child behaviors) as a developmental process less often than parents of three children, regardless of spacing.

(2) Parents of an only child referred to direct instruction from adults (verbal presentation of facts or information without implying involvement of

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[1] In addition, three 4-way interactions were obtained which will not be reported as they were not interpretable.

Table 7

Mean Number of Parental References to Selected Child Development Constructs

Sex of Parent, Family Constellation, SES and Sex of Child

Mothers

Construct	Only Child				3-Child; Near Spacing				3-Child; Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Absorption	5.90	3.60	2.80	4.20	2.40	4.60	2.40	4.00	3.00	4.80	5.20	3.00
Infusion	1.00	.90	.90	.60	.30	.90	.80	.70	.60	.20	1.40	.50
Positive feedback	4.60	5.20	4.10	5.80	4.70	4.20	6.30	6.00	4.60	2.50	3.60	4.70
Negative feedback	2.40	2.80	2.50	2.60	4.30	4.00	3.20	3.70	2.70	2.70	3.90	3.20
Direct instruction	11.90	10.90	10.40	7.50	9.50	5.60	9.50	7.50	8.10	9.60	7.70	7.70
Observation	2.20	3.20	2.50	3.30	5.20	2.80	2.00	1.80	2.30	2.00	3.60	3.90
Generalization	.40	.40	.30	.60	.50	.20	.20	1.20	.40	.70	.50	.40
Cognitive reorganization	0	.50	0	.90	.30	.30	.20	.40	0	0	.70	.40
Self regulation	1.50	2.50	1.30	1.00	2.80	2.50	1.30	2.50	.90	1.40	3.40	3.20
Creativity	.70	1.00	2.50	1.70	1.70	2.50	1.10	2.40	1.00	1.90	.90	1.30
Readiness	3.40	4.40	6.20	3.80	5.60	3.40	6.60	5.30	3.70	4.70	4.60	5.90
Stage	1.20	1.70	2.40	2.70	1.80	1.50	2.20	2.10	1.60	1.80	1.70	3.00
Structure of environment	2.90	2.80	4.40	2.60	2.70	4.00	4.00	3.50	2.00	2.40	2.30	3.00
Conflict	.80	1.00	.60	.70	.70	.70	1.10	1.70	1.10	1.10	.50	1.10
Impulsivity	.80	1.20	1.50	1.30	1.00	2.10	1.90	1.80	1.80	2.00	1.30	1.00
Negative affect	1.00	1.10	1.40	1.10	1.40	.90	1.00	.80	1.00	.70	1.30	.40
Confidence in beliefs	1.90	2.80	2.30	3.20	2.90	2.40	3.10	2.30	2.00	2.60	2.50	3.20

Table 7 (Continued)

Mean Number of Parental References to Selected Child Development Constructs

Sex of Parent, Family Constellation, SES and Sex of Child

Fathers

Construct	Only Child				3-Child; Near Spacing				3-Child; Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Absorption	3.60	2.60	3.70	3.40	4.10	4.60	2.60	3.10	2.70	4.70	3.50	4.00
Infusion	.90	1.30	1.00	1.00	1.30	1.00	.90	1.30	1.50	2.30	.40	.80
Positive feedback	2.10	3.50	4.40	3.90	4.30	3.50	4.40	5.10	3.10	3.20	4.00	7.80
Negative feedback	2.20	2.90	4.20	3.30	3.10	3.20	3.70	4.80	4.10	3.20	4.60	4.40
Direct instruction	11.50	11.30	7.80	7.90	9.00	10.60	8.90	8.10	7.40	7.90	7.40	7.30
Observation	2.60	1.90	1.10	2.30	2.20	3.50	2.70	2.00	3.50	2.90	3.80	2.20
Generalization	.70	.50	.90	.30	1.30	.70	1.00	.90	.20	.80	1.80	.70
Cognitive reorganization	.20	.30	.30	.30	.20	0	.40	.70	0	.20	.70	1.70
Self regulation	1.10	1.40	1.90	1.20	2.20	2.40	2.10	2.00	2.10	1.30	3.50	2.60
Creativity	1.70	1.20	2.40	2.00	1.60	2.10	1.30	1.90	1.30	1.70	1.40	1.50
Readiness	5.30	3.90	5.50	5.80	5.40	5.70	5.00	8.10	5.40	4.50	6.00	9.60
Stage	1.50	1.90	2.00	2.30	2.00	2.50	3.10	3.20	1.90	2.00	2.70	3.50
Structure of environment	2.00	3.70	3.70	4.10	2.70	3.30	4.20	4.40	2.70	2.90	3.50	3.70
Conflict	.80	1.10	1.40	.50	1.70	.20	1.50	.40	1.40	.80	1.30	.90
Impulsivity	1.30	1.10	1.10	1.30	2.00	2.90	1.90	1.50	1.80	1.80	.90	1.20
Negative affect	.70	.50	.70	.70	1.00	.40	.50	.60	1.00	.70	.90	.50
Confidence in beliefs	2.60	1.80	3.50	2.80	3.00	3.00	3.00	3.30	2.50	2.70	2.40	3.20

Table 7 (Continued)

Standard Deviations of Parental References to Selected Child Development Constructs

Sex of Parent, Family Constellation, SES and Sex of Child

Mothers

Construct	Only Child				3-Child; Near Spacing				3-Child; Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Absorption	5.09	2.80	2.35	2.97	1.78	3.17	2.68	4.30	2.83	3.01	3.08	3.09
Infusion	2.21	1.01	.99	1.08	.68	1.37	1.32	.95	.97	.63	1.65	.85
Positive feedback	2.68	1.87	2.92	3.55	2.31	2.90	3.20	2.87	3.86	1.72	1.43	3.53
Negative feedback	2.59	1.87	1.27	2.01	2.45	2.11	2.62	1.83	1.25	1.70	4.18	2.62
Direct instruction	6.32	5.04	6.04	5.15	2.99	2.84	5.54	3.98	4.04	5.60	3.71	3.34
Observation	1.75	2.49	3.17	2.36	3.71	2.15	1.33	1.62	2.11	1.56	3.24	2.42
Generalization	.84	.70	.95	.84	.85	.42	.63	1.69	.97	.95	1.08	.84
Cognitive reorganization	.00	.35	.00	.99	.65	.95	.63	.84	.00	.00	.70	.97
Self regulation	1.96	1.58	1.42	1.56	1.69	.97	2.21	2.88	1.37	1.43	2.68	2.66
Creativity	1.16	1.05	1.18	1.06	1.77	1.72	.88	1.51	1.94	1.60	.99	1.42
Readiness	3.50	2.46	6.13	2.35	3.81	2.76	5.02	2.87	3.92	3.89	2.72	3.84
Stage	1.62	1.06	2.59	2.41	1.87	2.07	2.25	1.29	1.65	1.81	1.42	3.20
Structure of environment	1.73	1.99	3.69	1.71	2.87	4.00	2.94	1.65	1.83	1.65	2.11	2.16
Conflict	.92	.94	.97	1.06	1.06	1.16	1.29	2.21	.74	.99	.85	1.10
Impulsivity	1.40	1.14	1.58	1.49	1.16	2.81	1.73	1.40	1.40	1.70	2.06	1.33
Negative affect	1.49	1.60	1.27	.88	1.35	1.20	1.49	.92	1.33	1.34	1.25	.84
Confidence in beliefs	.99	1.23	1.16	.63	.99	1.17	1.29	1.34	.82	1.08	1.18	1.03

Table 7 (Continued)

Standard Deviations of Parental References to Selected Child Development Constructs

Sex of Parent, Family Constellation, SES and Sex of Child

Fathers

Construct	Only Child				3-Child; Near Spacing				3-Child; Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Absorption	2.99	2.37	2.75	1.78	2.03	4.62	2.99	2.03	1.25	3.95	3.38	3.92
Infusion	1.91	1.49	1.49	1.94	2.06	1.16	1.37	1.57	2.01	1.70	.70	1.14
Positive feedback	1.29	1.72	3.44	3.11	2.87	2.32	2.32	4.23	2.03	3.05	2.91	2.39
Negative feedback	2.62	2.60	1.75	1.64	2.38	1.99	3.13	2.49	2.64	1.99	2.91	3.20
Direct instruction	5.40	6.72	4.21	5.47	4.06	3.13	8.03	7.26	3.13	6.76	2.84	3.06
Observation	2.12	3.11	.99	2.21	1.69	2.76	2.75	1.63	3.31	3.78	2.20	2.49
Generalization	1.64	.71	1.20	.48	1.06	1.16	1.16	.88	.63	1.03	1.55	1.16
Cognitive reorganization	.63	.95	.68	.68	.63	.00	.97	.95	.00	.63	1.49	2.54
Self regulation	1.10	1.65	3.04	.92	2.49	1.58	1.97	1.49	1.45	1.16	2.84	2.99
Creativity	1.57	1.40	1.43	1.63	1.27	1.66	1.16	1.66	1.77	1.25	1.35	1.18
Readiness	2.87	2.42	3.72	3.68	4.22	4.06	4.83	6.03	4.25	3.84	4.22	6.50
Stage	1.43	2.08	1.56	1.64	1.83	2.22	3.38	2.44	1.29	1.49	2.75	1.51
Structure of environment	2.21	3.34	3.09	3.18	2.16	1.77	4.16	3.98	1.83	3.07	2.51	2.26
Conflict	.79	1.20	1.35	.97	1.70	.63	1.51	.84	1.78	1.23	1.25	1.37
Impulsivity	1.83	.88	1.37	1.77	1.63	3.28	1.97	1.58	1.93	1.81	1.10	1.87
Negative affect	1.16	.85	.82	.95	1.33	.97	.85	.84	.94	.95	1.10	.71
Confidence in beliefs	1.08	.79	.71	1.14	.82	.82	.82	1.06	.85	.68	1.08	1.03

processes internal to the child) *more often* than parents of three children with far spacing.

(3) Parents of an only child referred to *self-regulation* (internal governing and controlling processes produce systematic order and coordinated actions/behaviors; process or mechanism through which equilibrium is achieved/maintained between internal and external states) *less often* than parents of three children regardless of spacing.

(4) Parents of an only child referred to *impulsivity* (a tendency to act on sudden spontaneous inclinations or incitement to unpremeditated action) *less often* than parents of three children, regardless of spacing.

(5) Middle-class parents with far child spacing and working-class parents with near spacing referred to *self-regulatory processes* *more often* than parents in other SES-family constellation groups.

(6) Middle-class parents with far spacing and working-class parents with near spacing posited *inferences based on observation* (process of making a judgment based on sensory experience) as a developmental process *more often* than middle-class parents with an only child or with near spacing.

(7) Middle-class parents with far spacing referred to *cognitive reorganization* (process of drawing underlying principles from objects/events and mentally synthesizing information to form concepts/ideas) *more often* than parents in all other groups.

(8) Middle-class parents of an only child and working-class parents with near child spacing referred to children's *creativity and imagination* (forming a notion that is new or original or has never before been wholly perceived in reality) *more often* than all other groups.

(9) Mothers of only children and with near spacing between children referred to *positive feedback* (pleasant external consequence of behavior serves to motivate, provide information or make behavior more likely to re-occur) as a developmental process *more often* than fathers in these same two family constellations.

(10) Parents with near spacing between boys referred to *creativity and imagination* *more often* than parents in all other family constellation x sex of child groups. In addition, parents of female only children made such references *more frequently* than parents of female children with far spacing.

(11) Parents with far spacing between daughters expressed *less confidence* in their constructions of child development than those with near spacing between daughters and with far spacing between sons.

(12) Middle-class parents with far spacing between daughters referred to generalization (process whereby a behavior or idea obtains a general form that is applicable to many situations outside of the specific present instance) *more often* than parents of male only children and working-class parents with far spacing between daughters or near spacing between sons.

(13) Working-class parents of a female only child and of sons with far spacing referred to *absorption* (taking in information without processing or transforming *more often* than working-class parents with far spacing and middle-class parents with near spacing between daughters.

(14) Mothers of a female only child expressed *less confidence* in beliefs than all other parents except mothers of far-spaced daughters. In addition, fathers of a female only child expressed *more confidence* than fathers of male only children.

To summarize thus far, the main effects involving family constellation (cf. results for negative feedback, direct instruction, self-regulation, impulsivity) appear to be due to variation in beliefs that occurred with the differences in family size for the parents involved in this study. Parents of only children tended to differ from parents of three children, regardless of the spacing that exists in the multiple-child families. Any relationship that exists between family size and parental beliefs must be considered in terms of alternative directions of causality at this point. For example, parents of an only child posited direct instruction from adults as a process through which the child learns concepts more often than other parents, and referred to self-regulation less often. It is possible that the parents of only children in this study planned to have an only child (or more than four years spacing if the family is not yet complete) precisely because of their beliefs in the importance of direct instruction relative to self-regulatory processes. On the other hand, parents of three children may have observed that their second-born child developed similarly to their firstborn child in spite of the second-born having received less direct instruction from the parents. Thus, the beliefs may have existed prior to family constellation, and the family planned in accordance with those beliefs, or parental beliefs may have been affected by experience as a parent of more than one child.

Variation in parental beliefs with regard to differences in child spacing, as opposed to family size, appears to be important only when family constellation is considered in relation to socioeconomic status (cf. results for self-regulation, inference based on observation, cognitive reorganization, creativity and imagination). The similarity of middle-class parents with far child spacing and working-class parents with near child spacing in their more frequent references to self-regulatory processes and processes of inferences based on observations was not predicted a priori. It is interesting to note, however, that the discriminant function analysis applied to the six groups of children formed by considering family constellation and SES simultaneously yielded analogous results for children's problem-solving performance. That is, children from middle-class far-spacing and from working-class near-spacing families were similar to one another on the strongest function composed of cognitive assessment scores, and were differentiated from the other four groups of children.

Again, post hoc interpretations of these interactions led to speculation that similarity of parental beliefs for these two groups may be the result of different factors, although the impact on the children may be the same regardless of why parents believe what they do. Consider the following argument, for example. It had been hypothesized that middle-class parents would refer to processes included in more current developmental theories (e.g., Piaget), in accord with Bronfenbrenner's (1958) hypothesis that accessibility to expert opinion varies with social class. It is reasonable, therefore, to suppose that some of these middle-class parents who attend to such expert opinion might also rely on literature from experts that recommends far spacing between children. For example, a recent issue of Baby Talk (1977, volume 44, page 21) presented a column entitled "What do the experts say?" at the close of an article about the best time to have a second child. Burton White's position was summarized as "spacing less than three years is difficult for the baby, the mother and especially the slightly older child." Helen Smith's position was presented as a preference for four years spacing, and Lee Salk's of at least three years. Brazelton "recommends that a mother seriously evaluate her own stamina and patience. He warns that while two children under four can be difficult, two under two can be exhausting." Only one expert, Pomeranze, was presented as advocating two year spacing to provide companions and playmates for siblings. Thus, middle-class parents with far spacing may have actually planned their families to provide far spacing between birth intervals, given greater exposure to expert opinion concerning both child development processes and family planning.

The beliefs of working-class parents of closely spaced children are not subject to such an interpretation, and may arise from different considerations. Based on data concerning beliefs of parents from lower socioeconomic backgrounds, Sutherland (Note 3) has suggested that in lower SES homes that evidence high degrees of density, parents are likely to espouse beliefs in self-regulation, independence, internal child processes and internal locus of control, in spite of other controlling (authoritative and authoritarian) aspects of parenting. Sutherland relates these findings to a concept of survival. That is, parents are constrained by the density of the family to a degree that they must allow the child to develop on his/her own, to become self-sufficient and to operate independently with a minimum of assistance from others either within or outside of the family.

Significant main effects for socioeconomic status were also obtained from the analyses of variance mentioned at the beginning of this section. All interaction effects for socioeconomic status also involved family constellation as were reported above. The significant main effects were as follows: Middle-class referred to constructs of (1) positive feedback, (2) readiness, (3) structure inherent in the environment, (4) stages and (5) expressed confidence in their beliefs more frequently than working-class parents. Working-class parents referred to (6) direct instruction from adults more often than middle-class parents.

Main effects for parent sex were obtained for the constructs (1) inferences based on observation, (2) infusion directly from the environment, (3) readiness, and (4) negative affective states of the child. Fathers referred to constructs (1), (2), and (3) more often than mothers, and referred to negative affective states less frequently than mothers. The main effect for the construct of inference based on observation was subsumed by a significant two-way interaction involving sex of child. Fathers of daughters tended to refer to such processes more often than other parents. Fathers of daughters also referred to conflict within the child more often than other parents. With respect to sex of child, only one significant main effect was obtained. Parents of female children referred to negative affective states of the child more frequently than parents of male children.

Parental communication strategy beliefs

Frequencies obtained for parents preferred and predicted follow-up strategies, childrearing goals, childrearing orientation, active temporal focus and constraints were also subjected to a 3 x 2 x 2 x 2 (family constellation x SES x parent sex x child sex) analysis of variance. Significant effects were obtained for 20 of the 28 variables (p's < .05). Contrary to predictions, however, differences between family constellation groups were obtained for only four of the variables (see Tables 8 and 9).

A significant main effect between family constellation groups was obtained for parental preferences for authoritarian strategies. Parents with near child spacing evidenced such a preference more often than other parents. This finding was subsumed under a family constellation x SES interaction. Post hoc tests indicated that working-class parents with near spacing evidenced (1) a preference for authoritarian behavior more often than all middle-class parents and than working-class parents with far child spacing. Analysis of preferences for (2)

Table 8

Mean Maternal Responses on Selected Communication Strategy Interview Variables by Family Constellation, SES, and Sex of Child

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Mothers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
Distancing Strategy Preference	3.90	6.50	5.30	7.70	5.85	3.10	3.40	4.30	8.00	4.70	5.50	5.80	5.20	8.80	6.33	5.63
Rational Authoritative Strategy Preference	10.30	9.80	10.10	7.80	9.50	11.50	10.40	11.20	6.70	9.95	11.00	6.70	10.20	6.70	9.73	9.73
Activity Strategy Preference	2.10	1.90	4.00	2.20	2.55	2.50	2.40	3.20	2.70	2.70	1.70	2.40	1.80	2.40	1.88	2.38
Direct Authoritative Strategy Preference	1.80	2.20	.60	1.20	1.45	2.50	3.30	1.10	2.50	2.35	1.00	2.10	1.90	2.10	1.73	1.84
Authoritarian Strategy Preference	2.00	2.20	.60	1.20	1.50	3.00	4.00	1.50	2.60	2.78	1.40	2.50	2.10	2.50	2.00	2.09
Passivity Strategy Preference	1.00	.90	.20	.60	.68	.20	.70	.20	1.30	.60	.20	.20	.30	.20	.38	.55
Diversion Strategy Preference	4.60	2.40	3.60	4.40	3.75	3.50	3.10	3.40	2.70	3.18	4.20	3.20	4.40	3.20	3.60	3.51
Distancing Follow-up Strategy	1.40	2.00	1.90	1.10	1.60	1.50	1.80	1.80	3.10	2.05	1.50	1.60	1.80	2.20	1.78	1.81
Passivity Follow-up Strategy	1.00	.70	.80	.70	.80	1.00	1.10	1.00	.80	.98	.70	.40	.70	.40	.58	.78
Authoritarian Follow-up Strategy	2.20	2.80	3.10	1.60	2.43	3.00	4.00	2.40	2.50	2.98	3.00	1.80	2.50	1.80	2.55	2.65
Diversion Follow-up Strategy	1.80	1.30	1.30	3.30	1.93	1.60	.90	1.20	1.40	1.28	1.90	1.50	1.70	1.50	1.65	1.62
# Childrearing Goals Associated with Preferred Strategies	36.00	43.30	49.20	50.70	44.80	45.10	40.30	43.90	56.90	46.55	43.40	42.40	47.30	47.90	45.25	45.53

Table 8 (Continued)

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Mothers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
# Childrearing Goals Associated with Follow-up Strategies	17.30	18.20	21.40	27.40	21.08	21.70	15.60	19.00	21.60	19.48	18.60	18.00	21.00	19.60	19.30	19.95
Cognitive Goals	21.70	24.00	24.20	24.50	23.60	22.40	18.70	20.80	25.60	21.88	21.90	25.50	24.60	25.50	23.40	22.96
Personal-Social Goals	12.40	13.70	18.00	20.40	16.13	16.50	14.70	15.50	17.40	16.03	13.70	17.70	18.40	17.70	15.73	15.96
Management Goals	2.30	3.50	6.00	6.20	4.50	4.90	3.80	5.30	5.90	4.98	2.30	3.60	4.90	3.60	3.80	4.43
Active Temporal Focus	9.50	11.80	10.30	11.70	10.83	6.50	5.30	6.50	13.10	7.85	8.50	23.30	13.70	23.30	14.05	10.91
Child Orientation	17.30	20.60	23.70	23.40	21.25	20.70	18.00	19.20	24.00	20.48	18.60	18.00	22.10	23.70	20.60	20.78
Parent Orientation	12.90	9.10	18.80	15.60	14.10	18.30	10.00	15.00	12.10	13.85	15.60	14.40	18.40	16.40	16.20	14.72
Other Orientation	1.60	1.30	1.40	1.60	1.48	2.80	1.40	2.30	1.70	2.05	2.20	1.60	2.10	2.30	2.05	1.86
Child Constraints	9.80	9.30	11.90	11.30	10.58	10.40	11.60	14.10	13.00	12.28	6.50	8.80	9.50	9.80	8.65	10.50
Parent Constraints	7.10	10.70	10.80	9.40	9.50	7.30	8.70	10.60	9.70	9.08	4.80	7.10	8.90	10.40	7.80	8.79
Setting Constraints	.70	1.30	2.10	1.80	1.48	.70	1.30	1.80	2.20	1.50	.30	.60	1.30	2.90	1.28	1.42
Other Constraints	.20	1.00	.80	.30	.58	.50	.60	1.10	.50	.68	.50	1.10	1.10	.80	.88	.71

Table 8 (Continued)

Standard Deviations of Maternal Responses on Selected Communication Strategy Interview Variables

by Family Constellation, SES, and Sex of Child

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Mothers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
Distancing Strategy Preference	5.24	5.38	3.97	4.81	4.90	3.96	3.37	3.02	4.11	4.02	4.79	6.37	5.22	6.41	5.71	4.93
Rational Autnoritative Strategy Preference	5.46	5.83	6.19	5.81	5.69	4.79	3.34	3.65	3.97	4.28	5.03	6.09	4.05	4.27	5.06	5.01
Activity Strategy Preference	1.85	1.29	3.06	1.48	2.14	2.46	3.06	2.82	1.64	2.47	1.70	1.51	2.53	1.90	1.90	2.19
Direct Authoritative Strategy Preference	2.82	1.40	.97	1.03	1.77	3.47	1.89	1.20	1.27	2.23	1.05	2.38	2.08	2.42	2.03	2.03
Authoritarian Strategy Preference	2.79	1.40	.97	1.03	1.77	3.37	2.58	1.18	1.27	2.38	1.35	2.40	2.08	2.37	2.05	2.13
Passivity Strategy Preference	.82	1.91	.63	1.08	1.21	.42	1.25	.42	2.41	1.41	.42	1.14	.48	.63	.74	1.15
Diversion Strategy Preference	2.95	1.84	3.50	3.27	2.98	2.42	2.38	2.12	2.54	2.30	3.16	2.32	3.13	1.99	2.70	2.66
Distancing Follow-up Strategy	1.70	1.41	2.13	1.10	1.43	1.18	1.48	1.75	1.97	1.68	.85	1.27	.79	1.55	1.14	1.43
Passivity Follow-up Strategy	1.05	1.06	.92	.68	.91	.94	1.20	1.25	1.03	1.07	1.06	.71	.95	.52	.81	.95
Authoritarian Follow-up Strategy	1.40	1.48	2.38	.97	1.68	2.11	2.45	1.51	2.22	2.12	2.16	1.85	1.58	1.32	1.75	1.86
Diversion Follow-up Strategy	1.48	1.16	1.06	1.42	1.49	1.17	.74	.92	.97	.96	1.79	1.08	1.16	.71	1.21	1.26
# Childrearing Goals Associated with Preferred Strategies	7.80	7.38	9.58	12.24	10.80	7.59	2.31	8.14	21.05	13.11	6.98	8.24	7.79	12.19	9.00	11.03

Table 8 (Continued)

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Mothers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
# Childrearing Goals Associated with Follow-up Strategies	5.17	3.65	2.91	15.75	9.19	4.62	3.50	4.22	4.03	4.69	3.31	3.97	3.20	4.06	3.70	6.32
Cognitive Goals	9.99	12.44	7.91	9.02	9.66	8.51	4.79	4.98	7.32	6.83	7.40	6.11	7.34	9.13	7.47	8.05
Personal-Social Goals	6.06	5.01	5.27	6.69	6.45	7.59	4.99	5.38	6.22	5.98	6.13	3.67	5.42	10.40	7.01	6.44
Management Goals	2.00	2.72	4.67	4.34	3.85	2.89	3.55	3.13	3.48	3.24	2.36	2.50	2.85	2.32	2.61	3.28
Active Temporal Focus	13.22	13.66	7.18	7.42	10.44	5.80	4.42	6.93	11.08	7.83	8.67	9.23	11.73	20.55	14.11	11.29
Child Orientation	9.11	8.04	6.88	6.02	7.76	6.45	5.48	7.63	6.11	6.61	8.64	8.45	4.51	9.56	8.08	7.46
Parent Orientation	13.88	13.32	16.18	16.29	14.84	16.04	15.02	15.61	15.10	15.17	16.55	14.92	15.20	14.71	14.83	14.86
Other Orientation	1.08	1.42	1.43	1.35	1.28	2.25	1.35	2.36	1.42	1.91	1.32	1.43	1.10	1.06	1.22	1.51
Child Constraints	6.30	5.10	5.97	4.11	5.33	5.04	4.95	6.87	5.85	5.68	3.50	6.58	6.74	4.19	5.39	5.63
Parent Constraints	4.82	6.52	6.16	4.45	5.55	2.98	4.17	9.23	5.85	5.93	2.53	5.57	7.14	4.33	5.40	5.63
Setting Constraints	1.25	1.57	3.35	2.44	2.28	1.06	2.16	2.10	1.93	1.88	.68	.70	1.83	2.13	1.75	1.97
Other Constraints	.42	1.16	1.03	.68	.90	.97	.70	1.52	1.27	1.14	.97	1.60	1.20	1.14	1.22	1.10

Table 9

Mean Paternal Responses on Selected Communication Strategy Interview Variables by Family Configuration, SES, and Sex of Child

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Fathers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
Distancing Strategy Preference	5.70	2.30	4.80	4.50	4.33	3.50	3.30	5.90	9.70	5.60	5.40	7.40	8.00	4.30	6.28	5.40
Rational Authoritative Strategy Preference	10.60	11.50	10.70	13.10	11.48	11.50	10.40	11.00	5.50	9.60	11.20	9.80	9.80	8.80	9.90	10.33
Activity Strategy Preference	3.00	4.10	1.90	1.80	2.70	2.40	2.50	2.60	3.60	2.78	2.80	3.40	2.10	3.40	2.93	2.80
Direct Authoritative Strategy Preference	2.00	3.30	3.20	1.00	2.38	3.40	3.40	1.60	2.20	2.65	1.30	1.30	1.10	3.50	1.80	2.28
Authoritarian Strategy Preference	2.30	3.90	3.40	1.00	2.65	3.60	3.60	2.10	2.30	2.90	1.40	1.50	1.10	3.80	1.95	2.50
Passivity Strategy Preference	.10	.70	.30	.30	.35	.20	.90	.20	.30	.40	.10	.10	.60	.40	.30	.35
Diversion Strategy Preference	2.00	1.50	2.90	3.30	2.43	2.70	3.20	1.70	2.40	2.50	2.70	1.70	2.40	3.10	2.48	2.47
Distancing Follow-up Strategy	1.30	1.30	1.30	2.90	1.70	1.70	1.40	2.50	2.40	2.00	1.60	1.30	2.80	1.60	1.83	1.84
Passivity Follow-up Strategy	1.10	1.50	.70	.30	.90	.60	.90	1.30	.60	.85	.80	1.10	.40	.90	.80	.35
Authoritarian Follow-up Strategy	3.00	4.00	2.80	2.20	3.00	3.40	3.70	3.00	2.30	3.10	2.70	3.10	2.50	3.20	2.88	2.99
Diversion Follow-up Strategy	1.40	1.00	1.70	1.40	1.38	.80	.90	1.00	1.30	1.00	1.20	.60	1.60	1.50	1.23	1.20
# Childrearing Goals Associated with Preferred Strategies	40.80	42.40	47.60	46.30	44.28	44.90	49.80	54.40	47.40	49.13	45.10	42.70	48.70	43.80	45.08	46.16

Table 9 (Continued)

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Fathers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
# Childrearing Goals Associated with Follow-up Strategies	15.90	16.20	21.60	19.70	18.35	16.90	17.40	22.30	21.80	19.60	19.40	18.20	20.70	18.50	19.20	19.05
Cognitive Goals	22.80	20.60	23.80	26.80	23.50	20.30	18.90	26.50	30.80	24.13	22.10	23.00	26.30	22.90	23.58	23.73
Personal-Social Goals	10.30	15.40	15.60	13.00	13.58	15.00	18.10	15.70	13.30	15.53	15.40	11.00	14.30	13.30	13.50	14.20
Management Goals	4.20	4.40	6.70	4.40	4.93	3.40	5.10	3.90	5.20	4.40	4.60	3.10	4.90	4.30	4.23	4.52
Active Temporal Focus	6.20	5.90	16.40	10.60	9.78	7.70	5.50	11.70	18.50	10.85	4.90	9.70	12.00	9.20	8.95	9.86
Child Orientation	19.10	19.80	19.00	22.20	21.00	16.90	15.20	21.60	23.80	19.38	16.60	19.80	23.10	21.60	20.28	19.82
Parent Orientation	15.50	11.00	32.00	14.90	12.95	18.60	11.70	15.20	10.70	14.05	16.60	13.30	17.80	19.70	16.85	16.42
Other Orientation	1.50	1.70	1.20	1.40	1.55	1.50	2.10	2.70	1.30	1.90	1.50	1.30	2.20	1.70	1.68	1.68
Child Constraints	8.10	8.20	8.70	12.00	9.25	11.40	10.70	12.70	12.30	11.78	7.10	10.20	9.60	12.50	9.85	10.29
Parent Constraints	7.00	7.90	9.40	9.80	8.53	10.40	11.20	9.30	9.60	10.13	8.60	8.10	11.50	12.10	10.08	9.58
Setting Constraints	.70	1.60	2.20	1.00	1.38	1.90	1.30	3.10	1.60	1.98	.30	1.50	1.30	2.40	1.38	1.58
Other Constraints	.30	.80	1.30	.40	.70	.50	.30	.70	.40	.48	.30	.40	.70	.80	.55	.58

Table 9 (Continued)

Standard Deviations of Paternal Responses on Selected Communication Strategy Interview Variables by Family Configuration, SES, and Sex of Child

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Fathers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
Distancing Strategy Preference	7.56	2.26	5.22	4.28	5.15	2.88	3.92	5.26	5.48	5.06	4.53	5.08	6.57	3.83	5.13	5.13
Rational Authoritative Strategy Preference	5.76	3.84	4.55	5.78	4.96	3.47	2.88	6.33	2.76	4.65	4.69	5.77	7.27	3.74	5.38	5.03
Activity Strategy Preference	3.02	2.85	1.97	1.69	2.53	2.01	1.51	2.55	3.31	2.39	1.99	1.78	2.38	2.91	2.28	2.39
Direct Authoritative Strategy Preference	1.70	3.80	2.57	1.94	2.71	1.90	2.76	2.32	3.16	2.60	2.11	1.06	2.28	3.57	2.53	2.62
Authoritarian Strategy Preference	1.89	3.87	2.72	1.94	2.85	1.84	2.68	2.33	3.09	2.53	2.12	1.18	2.28	3.49	2.56	2.66
Passivity Strategy Preference	.32	.95	.68	.68	.70	.42	1.37	.42	.95	.90	.32	.32	1.08	.84	.72	.77
Diversion Strategy Preference	2.67	1.51	2.73	2.21	2.35	1.77	1.99	1.42	2.32	1.91	3.23	1.57	2.50	2.33	2.44	2.23
Distancing Follow-up Strategy	1.34	1.57	1.25	2.47	1.30	1.57	.84	1.35	2.95	1.84	1.84	1.34	2.15	2.01	1.88	1.83
Passivity Follow-up Strategy	1.37	1.18	.95	.68	1.13	.52	.74	1.25	.70	.86	.63	.99	.70	.99	.85	.95
Authoritarian Follow-up Strategy	1.41	1.89	1.40	1.75	1.70	1.35	1.34	1.83	2.06	1.69	1.89	1.37	1.43	.79	1.40	1.59
Diversion Follow-up Strategy	1.17	1.16	1.70	1.17	1.30	.42	.99	.94	.82	.82	1.14	.69	1.71	1.18	1.25	1.14
# Childrearing Goals Associated with Preferred Strategies	8.78	9.14	7.15	11.27	9.28	7.39	21.71	18.31	6.36	14.80	10.14	11.23	14.05	7.53	10.80	11.95

Table 9 (Continued)

Variable	One-Child Family					Three-Child Family with Near Spacing					Three-Child Family with Far Spacing					Total for Fathers
	Working Class		Middle Class		Only Child	Working Class		Middle Class		Near Spacing	Working Class		Middle Class		Far Spacing	
	Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		
# Childrearing Goals Associated with Follow-up Strategies	3.25	3.01	6.96	5.58	5.37	4.25	5.08	10.20	4.52	6.71	7.26	6.96	3.83	3.34	5.50	5.87
Cognitive Goals	10.33	15.46	8.40	8.59	8.36	4.81	8.85	10.52	10.02	9.79	4.82	7.09	7.96	5.65	6.45	8.25
Personal-Social Goals	5.72	7.12	5.70	6.11	6.33	6.58	6.01	4.99	5.52	5.84	8.71	6.83	6.31	5.03	6.78	6.35
Management Goals	4.47	2.46	5.66	2.76	4.03	3.24	2.18	2.03	4.05	2.98	1.65	2.92	3.18	2.11	2.54	3.23
Active Temporal Focus	7.60	3.67	17.96	12.31	12.02	6.57	9.31	9.01	13.57	10.78	3.73	11.68	8.67	5.05	8.04	10.35
Child Orientation	6.71	6.91	7.87	7.05	6.91	5.15	7.19	8.63	7.63	7.81	5.85	6.25	3.87	5.93	5.88	6.89
Parent Orientation	16.58	15.94	50.69	15.54	15.48	15.57	14.96	15.67	13.96	14.30	17.55	13.41	15.40	16.18	15.27	20.64
Other Orientation	1.27	1.57	1.49	1.51	1.50	.97	1.37	1.34	1.16	1.30	1.08	1.25	1.32	2.00	1.44	1.38
Child Constraints	5.36	4.71	6.04	2.67	4.95	7.49	4.27	7.04	6.72	6.24	4.15	6.80	6.10	6.79	6.13	5.86
Parent Constraints	7.32	3.76	5.04	6.99	5.83	5.40	7.21	7.85	4.74	6.22	4.93	6.36	7.03	7.74	6.57	6.20
Setting Constraints	1.34	2.01	3.01	1.33	2.05	2.73	1.57	4.63	2.50	3.03	.48	1.51	1.57	1.78	1.56	2.29
Other Constraints	.40	.92	3.09	.52	1.64	1.08	.48	1.06	.97	.91	.68	.70	1.57	1.03	1.04	1.23

direct authoritative strategies also yielded a significant interaction involving family constellation and SES. Working-class parents with near child spacing preferred such strategies more often than other parents.

A family constellation x parent sex interaction was found to be significant for (3) active temporal focus of the parent. Mothers of families with far spacing evidenced an active temporal focus in their communication strategy preferences more often than mothers with near child spacing.

Significant main effects for socioeconomic status were obtained for preferences for distancing and rational authoritative strategies, authoritarian follow-up strategies, number of goals, cognitive, personal-social and management childrearing goals, active temporal focus, child orientation and parent, child and setting constraints. Frequencies were higher for middle-class parents than for working-class parents for all variables except preference for rational authoritative strategies and for predicted authoritarian follow-up strategies. Means for working-class parents were higher than those for middle-class parents on these variables. It should be noted that analyses of types of goals were also conducted on proportion scores (type of goal/number of goals) in order to assess whether differences that occured with socioeconomic status were maintained when total number of goals did not vary. Results were similar for proportion and frequency scores.

Significant socioeconomic status x parent sex interactions were obtained for preferences for activity (e.g., demonstration by the parent, participation with the child) strategies and personal-social goals for the child. Working-class fathers preferred activity strategies more frequently than working-class mothers and middle-class mothers expressed more personal-social goals than other parents. In addition, working-class mothers of females expressed a childrearing orientation towards others outside of the family more often than working-class mothers of males and middle-class fathers of boys. In addition, socioeconomic status and sex of child interactions were found for authoritarian follow-up strategies and constraints due to nonfamily members (other constraints). Working-class parents of sons posited authoritarian strategies more often than other parents and middle-class parents of daughters referred to constraints of others more often than working-class parents of females and middle-class parents of sons.

Main effects in parents' communication strategy beliefs were also found for sex of parent and sex of child. Mothers preferred diversion from the problem as a communication strategy more often than fathers and referred to personal-social goals more often than fathers. With regard to sex of child, parents of daughters preferred rational authoritative strategies more often and passive communication strategies (e.g., concession, nonintervention) less often than parents of sons. Parents with female children also evidenced a parent (self) childrearing orientation more often than parents of boys. A parent sex x child sex interaction effect was significant for distancing strategy preferences. Mothers of daughters preferred distancing less frequently than mothers of sons.

In summary, analysis of parents' communication strategy beliefs did not indicate many differences in preferences, goals or orientation for the three family constellation groups. That is, parents with different numbers of spacing between children do not differ markedly from one another in the ways they believe they should communicate with their children or the goals they hope to accomplish with their ideal communication strategies. Parents' beliefs about the best way to handle everyday situations with their preschool child as well as the goals they hope to accomplish with such strategies, did not appear to vary with socioeconomic status. Middle-class and working-class parents differed from one another on many beliefs concerning the best communication strategies and the goals associated with them. The relationship of such differences to actual parenting practices and the question of whether parents with different family constellations behave in accordance with their similar preferences will be addressed in a subsequent section dealing with the relationship of beliefs and practices.

Parental beliefs concerning family constellation

The ideal number of children and years of spacing between children that parents listed on a questionnaire are presented in Table 10 by family constellation, SES and sex of parent. These data were organized in two ways. First frequencies for each category of ideal number of children (0-5 or more) and spacing (1-5 or more years) were obtained for each group (3 family constellation groups, 2 SES groups and 2 parent sex groups). Second, the number and spacing indicated as ideal was compared with actual number and spacing evidenced in the current family constellation. That is, parents' questionnaire responses were grouped as indicating an ideal family size (or spacing) that was either larger, smaller or equal to their present number (or spacing) of children.

Chi-square tests comparing frequencies of ideal number of children (grouped as 0-4 or more to avoid low expected frequencies in cells) were computed separately for comparisons between the three constellation groups, between the two SES groups, between mothers and fathers and between male versus female children. Not surprisingly, differences in expressed ideals varied with family constellation ($\chi^2(8) = 43.69$; $p < .001$). Parents of an only child cited ideal family sizes that were smaller than the ideal of multiple-child parents. Note that most parents of only children indicated an ideal family size

Table 10

Frequencies of Parents' Ideal Number and Spacing of Children by Current Family Constellation, Socioeconomic Status and Sex of Parents

	Family Constellation, SES and Sex of Parent											
	Only Child[a]				Near Spacing				Far Spacing			
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class	
	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father
Ideal Number of Children												
0	1	0	2	0	1	3	3	4	1	2	4	3
1	3	2	1	2	1	0	1	1	0	0	0	0
2	8	12	15	12	10	3	3	2	7	4	5	6
3	8	5	2	4	5	13	7	7	9	12	8	5
4	0	1	0	2	3	1	5	4	3	2	3	6
5 or more	0	0	0	0	0	0	1	2	0	0	0	0
Ideal Years Spacing Between Children												
1	2	5	0	3	3	6	3	5	0	3	3	3
2	3	4	1	5	9	7	5	3	3	8	2	4
3	10	4	8	8	8	2	11	12	14	8	13	10
4	4	6	9	3	0	0	1	0	3	1	2	3
5 or more	1	1	2	1	0	0	0	0	0	0	0	0

[a] For ideal spacing, parents were told to assume a three-child family and indicate ideal birth interval between first and second child.

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of two or more children. Ideal number of children also varied with socioeconomic status ($\chi^2(4) = 12.07$; $p < .05$). As Table 10 indicates, working-class parents stated that three-child families were ideal more frequently than middle-class parents. There were no significant differences between mothers and fathers and between parents of sons versus daughters with respect to ideal number of children.

Ideal number of years spacing between children (range used for analysis = 1-4 or more) also varied with family constellation ($\chi^2(6) = 39.17$; $p < .001$). Parents of only children posited four or more years spacing as ideal more frequently than other parents and parents with near child spacing preferred two years spacing more often than other groups. Ideals for spacing also varied with sex of parent ($\chi^2(3) = 9.93$; $p < .05$). Mothers preferred three or four years spacing more often than fathers.

Frequencies of parents who expressed ideal numbers of children that were smaller, larger or equal to their current family size, were also compared. Significant chi-squares were obtained only for family constellation groups. Parents of only children expressed an ideal family size larger than their own more frequently than the near- and far-spacing groups (69 versus 16 and 14 respectively). The ideal number of children proposed by parents of three children tended to match their current family size more often than that proposed by parents of an only child (32, 34 and 8 for near spacing, far spacing and only child families, respectively). Parents of three children also cited an ideal family size that was smaller than their own family more often than parents of an only child (32, 32 and 3 respectively). Note that parents of an only child had to have posited an ideal family size of no children in order to conform to the latter category.

Frequencies of parents whose ideals deviated or matched current child spacing were not analyzed by family constellation groups since none of the parents of only children and none of the parents with far-child spacing indicated an ideal spacing that exceeded that of their own family. Ideals for child spacing matched current family constellation for 27 only-child, 41 near-spacing and 54 far-spacing family parents (maximum possible = 80). Expressed ideal spacing was less than what existed in the family for 53 only-child, 6 near-spacing and 26 far-spacing family parents. Thirty-nine parents of near-spaced families expressed ideal spacing that was greater than that evidenced in their own families.

Parents' preferences for their own birth order, if they could choose, did not vary with family constellation groups included in this study. Most parents preferred to be a firstborn (28%) or second-born (24%). Fourteen percent cited a preference for being the youngest and only 1% preferred to have been an only child (other preferences cited were third- and fourth-borns; 32% could cite no preference).

Thus, data regarding parents' beliefs about the ideal number, spacing and birth order of children tended to be consistent with the current constellation of the family. It was somewhat surprising that 10% of the parents expressed an ideal family size that included no children, and that this phenomena was slightly more frequent in the three-child families. This finding might be due to the increasing acceptance of stating that one does not wish to become a parent, or indicate a reaction to the stress of being a parent in a larger family by today's standard of family size.

Parents' rationales for their size and spacing preferences were categorized as parent-oriented (e.g., health of mother, strain on marital relationships, desire to return to work), child-oriented (e.g., sibling to play with, amount of parental attention) or financial (e.g., what can be afforded, two children not in college at same time). Rationales did not vary with socioeconomic status, sex of parent or sex of child. Frequencies of references to each type of rationale are presented in Table 11 for each of the three family constellation groups. For ideal family size, parents of an only child gave fewer parent-oriented rationales and more child-oriented rationales than parents with three children ($\chi^2(4) = 19.23$; $p < .001$). Parents of only children also cited financial reasons for their preferences most often, and parents with far spacing cited such reasons least often.

Rationales for ideal spacing also varied with family constellation ($\chi^2(2) = 9.81$; $p < .01$; omitting financial category). Most parents gave child-oriented rationales regardless of family constellation, but parents with far spacing between children cited parent-oriented reasons more often than other parents.

Parental beliefs concerning family constellation were also assessed by asking them what effects family size, child spacing and birth order had on a child's development. Parents' responses were coded as indicating a positive or negative effect and for the particular area of development (e.g., cognitive, personality) that was affected. The number of parents who made references to positive and negative effects of family constellation factors is reported in percentages in Table 12 for each family constellation group. Analyses of variance indicated significant differences between the three-family constellation groups for (1) positive effects of a large family, (2) positive effects of far spacing, (3) negative effects of far spacing, (4) negative effects of being a firstborn, (5) positive effects of being a middle child, (6) negative effects of being a lastborn, and (7) negative effects of being an only child (p's $< .05$).

As Table 12 indicates, parents' beliefs about positive and negative effects of family constellation were concordant with the current family

Table 11

Reference to Each Type of Rationale for Ideal Number and Spacing of Children (%)

Type of Rationale	Family Constellation		
	Only Child	Near Spacing	Far Spacing
Ideal size			
Parent	21	47	44
Child	46	28	39
Financial	33	24	17
Ideal spacing			
Parent	27	32	46
Child	72	67	54
Financial	1	1	1

Table 12

References to Positive and Negative Effects of Family Constellation on a Child's Development (%)

	Family Constellation Groups		
	Only Child	Near Spacing	Far Spacing
Family size[a]			
Large +	46	61	85
Large -	78	59	60
Small +	41	41	51
Small -	10	19	19
Spacing			
Far+	43	18	29
Far -	53	84	79
Near +	48	73	54
Near -	58	36	65
Birth order			
First +	58	49	58
First -	36	54	68
Middle +	11	26	50
Middle -	48	58	53
Last +	31	29	41
Last -	33	43	64
Only +	33	20	33
Only -	48	91	100

[a] (+) denotes a positive effect and (-) a negative effect.

constellation of the parents for the most part. Fewer parents of an only child referred to positive aspects of a large family than parents of three children. Parents of only children were more likely to refer to positive aspects of far spacing and less likely to refer to negative aspects of far spacing than other parents. Negative effects of being firstborn were cited less frequently by parents of an only child. Parents of far-spaced children viewed a middle birth order position in the family as negative less often than parents with near spacing or with an only child, and were more likely to refer to negative aspects of being the youngest child than other parents. Finally, nearly all parents of multiple-child families referred to negative effects of being an only child, while less than half of the parents of an only child expressed such beliefs.

The areas of child development which parents viewed as being affected by family constellation also varied with current family constellation. Mean numbers of parents' references to positive and negative effects on cognitive, social, personality or emotional development are presented in Table 13. Analyses of variance yielded significant effects for family constellation for number of references to (1) negative effects on social development, (2) positive effects on personality development and (3) negative effects on personality development. Parents of an only child referred to negative effects of family constellation on both social and personality development less often than parents with three children. Parents of families with far spacing between children were more likely to refer to positive effects of family constellation on a child's personality development than parents with near spacing or with an only child.

Table 13

Mean Number of References to Areas of the Child's Development that Are Affected by Family Constellation

Area of Development[a]	Family Constellation Groups		
	Only Child	Near Spacing	Far Spacing
Cognitive +	.39	.35	.45
Cognitive -	.16	.11	.11
Social +	1.01	1.01	1.38
Social -	.69	.93	1.09
Personality +	.45	.44	.75
Personality -	.54	.91	1.08
Emotional +	.28	.25	.31
Emotional -	.61	.66	.75

[a] (+) denotes a positive effect and (-) a negative effect.

In summary, parental beliefs concerning ideal family constellation and the effects of family constellation on a child's development tended to be consistent with the family constellation of the parent, for the most part. Most parents of an only child cited an ideal family size of two or three children, but they also indicated that three or four years spacing between children was ideal. Thus, these one-child families may have been incomplete at the time of testing, although a follow-up questionnaire two years after testing showed that only 13 of 40 only-child families had experienced the birth of a second child. Thirty-three percent of the parents with far-spacing between children expressed ideal spacing that was less than that evidenced in their own family and 49 near-spacing parents ideally preferred greater spacing between children. References to positive and negative effects of family constellation on the child varied predictably with actual family constellation. It was somewhat surprising that so few references to effects on children's cognitive development were made by parents, regardless of socioeconomic status or family constellation. This indicates that the confluence model and references to "dumber by dozen?" in the popular literature have not had much impact on parents' beliefs. Rather, parents continue to refer to effects of family constellation on the social, personality and emotional development of the child.

Perceived sources of childrearing beliefs and practices

Prior to being interviewed, parents completed a questionnaire in which they were required to indicate sources of influence on the manner in which they were raising their child(ren). All but one parent indicated that their own upbringing had an impact. Eighty-one percent of the parents indicated that other parents had influenced their childrearing and 75% referred to the impact of teachers. Less than half of the sample (42%) indicated that books about childrearing or education or psychology had been an influence, and 40% indicated that noneducational television (e.g., "The Waltons," "Father Knows Best") had affected their practices. Frequency of report of impact of these variables did not vary significantly with family constellation or with socioeconomic status.

As part of the interview, parents were asked whether their own upbringing had affected the way in which they were raising their children. Parents' responses were coded on a Likert-type (4-point) scale as to the amount of impact, ranging from "none" to "considerable." In addition, parents were asked to identify the major factors influencing their childrearing beliefs. Parents' references to particular factors were coded according to nine categories (mate, other parents, experts, religion, formal instruction, books, television, other children, and other). Analysis of variance (family constellation x SES x sex of parent x sex of child) was applied to the amount of impact of parents' own upbringing and frequencies of other categories of influences on parents' childrearing beliefs.

Main effects for family constellation were found to be significant for formal education and books. Parents with near-child spacing indicated that formal education had influenced them more often and that books had influenced their beliefs less often than other parents. Reference to children outside of the family as an influence varied with family constellation and sex of child. Parents with far spacing between daughters evidenced higher frequencies than other parents. A significant family constellation x SES interaction was obtained for the amount of impact of the parents' own upbringing. Middle-class parents of an only child indicated the most influence and working-class parents of an only child the least influence.

Report of impact of expert opinion, formal schooling, and "other" influences (e.g., parent effectiveness training, EST, family members outside immediate family, etc.) also varied with socioeconomic status. Middle-class parents referred to these factors more often than working-class parents.

References to other parents and to books as influences on childrearing beliefs varied with sex of parent. Fathers referred to both of these factors more often than mothers.

In general, parents indicated that their own upbringing had been an important factor influencing how they believe children should be raised. This is true even for those parents who indicated that they believed the "opposite" of what they feel their own parents believed. As a result, other influences such as formal schooling, experts, books, were often mentioned tangentially, and these data should be regarded as such.

Report of change in beliefs and practices

Parents reports of changes in their beliefs and practices were also obtained as part of the interview. First, parents were asked to predict their initial and follow-up communication strategies for three situations if they involved the target child's sibling at age four years, and to indicate if (and why) their beliefs about child development processes had changed since they became parents. (Parents of only children predicted how they might respond if the child had a sibling in the future.) Second, parents were asked if and how amounts of time spent interacting with their children had changed (or would likely change, for only child families) with each birth. Third, parents were asked to describe the similarities and differences between their children and to discuss their expectations for the development of each child.

The number of times (0-3) parents proposed a categorically different initial communication strategy for the sibling than for the target child varied with family constellation. Parents of only children were more likely to posit a communication strategy that was categorically similar for the target child and (hypothetical) sibling than parents with three children (42 versus 69 and 69 for only, near- and far-spacing groups, respectively). Number of different follow-up strategies varied with parent sex. Mothers were likely to predict different strategies for the target child and sibling than fathers (p's < .05).

Parents' discussion of the amount of change in their construction of child development was coded according to a 4-point Likert scale representing a continuum from "no change" to "great change with no constancies discussed." Analysis of variance indicated that the amount of change in parents' constructions since becoming a parent varied with family constellation and with socioeconomic status. Parents of only children indicated less change in such beliefs than parents of three children (means = 1.97, 2.70 and 2.78 for only, near- and far-spacing groups, respectively),and middle-class parents indicated greater changes than working-class parents (means = 2.67 and 1.87, respectively). Frequencies of types of reasons given for change also varied with family constellation. Parents of only children referred to experience with the firstborn child as a source of change more often than parents of three children (24 versus 10 and 7). Parents of three children with near or far spacing referred to differences between children more often than parents of an only child (55 and 55 versus 13 for near, far and only groups, respectively). In addition, middle-class parents posited perceived differences between children as a reason for changing beliefs more frequently than working-class parents (81 and 49, respectively).

Reports of changes in time spent with children were coded for total amount of time (no change, decrease or increase) and for changes in the type of interaction (e.g., form change = interact in group rather than dyad; other parent =

spouse interacts more with one child, while self with other; substitute time = one child in school, with playmates rather than with parents) that occurred with the birth of more children. Reports of changes in total amount of time interacting with any of the children varied with family constellation. Parents of an only child anticipated that total time with children would not change with another birth more often than parents with three children (31 versus 18 and 19). Parents with near and far spacing stated that total amount of time with children actually decreases with more births more often than parents of an only child (23 and 35 versus 5). Parents viewed this decrease as a result of the necessity of spending more time in child-related chores (e.g., laundry, cooking, etc.). Parents from the three-family constellation groups differed in the frequency with which they reported changes in the nature or the form of the interaction. Parents with near spacing between children reported the greatest amount of form change (49), followed by the far-spacing groups (36), and then parents of only children (28). In addition, mothers were more likely to report that their spouses spent more time with children with additional births than fathers were (37 and 13, respectively).

With regard to comparison of amounts of time spent with the older sibling at age four years and the target child, no significant differences were obtained between parents of near- and far-spaced children. In both groups, parents stated that the amount of time spent with the second-born target child was less than that spent with the older firstborn sibling at that age. For comparison of amount of time spent with the target child versus a younger sibling, family constellation effects were found to be significant. Parents of only children predicted that amount of time spent with the target child would decrease with the birth of a younger sibling more often than parents of near- and far-spacing groups reported such a decrease had occurred with the birth of the youngest child (46 versus 21 and 19, respectively). Parents of an only child were also more likely to posit no change in amount of time with the target child if there were a younger sibling than parents with three children (26 versus 16 and 6).

Comparisons of the target child and his/her other sibling were elicited only from parents of multiple-child families. Parents with near and far spacing between children differed from one another in their assessment of whether the two children were different in personality (76% and 91%, respectively). For assessment of their children's cognitive, social and affective status, parents in these two groups did not differ from one another. Parents in all three family constellation groups were asked to discuss similarities and differences between the target child and younger siblings. Parents of an only child were asked to predict whether another child would be similar/different in certain areas. Significant differences were obtained for socioeconomic status groups but not family constellation. Working-class parents referred to similarities in the cognitive domain and to differences in personality more often than middle-class parents. Middle-class parents posited more differences in cognitive abilities than working-class parents.

Parents' reported expectations for differences between children prior to having any children did not vary with family constellation. Parents' current expectations of the children's capabilities did vary significantly with family constellation and with parent sex. Parents of only children reported that they expected different capabilities for different children less often than parents with three children,and fathers expected different capabilities less often than mothers.

In summary, differences between family constellation groups in reports of changes in beliefs and practices generally occurred between parents of an only child and those with three children. In many cases, this may have been due to the fact that parents of an only child were dealing hypothetically with the birth of a second child. Hence these results may reflect the naiveté of the parents of only children in their predictions that communication strategies, beliefs and allotment of time to each child would not change very much with the addition of another child to the family.

Relationship between parental beliefs and behaviors: Results of the descriptive analyses presented above indicate that some aspects of parental beliefs vary with family constellation and socioeconomic status. These findings are of interest in that they contribute to our understanding of parent behavior. That is, many studies have shown that SES, and particularly education level, and/or family constellation are related to differences in parental practices (Campbell, 1970; Chilman, 1965; Elder, 1962; Elder & Bowerman, 1963; Freeberg & Payne, 1967; Hilton, 1967; Marjoribanks, 1979; Pavenstedt, 1965; White, 1957). The question remains, do parental beliefs provide additional information about parental practices above and beyond such demographic variables as socioeconomic status and family constellation.

In order to evaluate the relationship between parental beliefs and parental behaviors independently of effects of family constellation and SES, an analysis of covariance was conducted. In applying the general linear model to these data, the first task was to investigate the extent to which family constellation and SES correlated with parental behaviors (dependent variables). Tests for covariates involved (a) testing for main effects separately in an equation that included the means of the dependent variables, and (b) testing the interaction of the covariates, with the interaction as an added term in the equation. The control variables (SES, family constellation and interaction variables) and the explanatory variables (parental belief variables) were then entered into a regression analysis in a stepwise fashion. This procedure was followed for each parental behavior variable in each of the two observation tasks, in relation to constructs of development beliefs, and in relation to communication strategy beliefs. Thus, a multiple correlation indicating the magnitude of the relationship between parental beliefs and parental behaviors was produced after family constellation and SES were forced into the analysis. All multiple correlation coefficients were compared to zero order coefficients for direction and significance of relationships. Differences in sign and/or significance occurred for only two of the obtained multiple correlation coefficients and these variables were deleted from the results reported. One additional significant belief variable was deleted as a predictor because it failed to provide a minimum increment of at least three points in the multiple correlation coefficient. Results of the multiple regression analyses will be presented first for parental constructs of child development and then for communication strategy beliefs.

Child development constructs and parental behaviors

Four sets of stepwise regressions were conducted in the manner described above. As predicted, correlations between behaviors on the two observation tasks and between behaviors of mothers and fathers were low, and analyses were conducted with sex of parent and task considered separately. Thus, mothers' behaviors on the story task, mothers' behaviors on the paper task, fathers' behaviors on the story task and fathers' behaviors on the paper task served as the dependent variables for the four sets of analyses.

Results of analyses of the relation between mothers' child development construct scores and behaviors on the story and paperfolding tasks are presented in Table 14. A total of 30 behaviors were analyzed for the story task and 31 for the paper task. A significant relationship between socioeconomic status and mothers' behaviors was obtained for only six of the variables (story: length of interaction, verbal approvals; paper: number of statements, number of questions, structuring task, helping intrusions). A significant relationship between family constellation and behaviors was found for only two behavior variables (paper: positive nonverbal supports, helping intrusions) and the correlation between the interaction terms of SES and family constellation reached significance for number of low level questions exhibited on the story task and takeover intrusions on the paper task. The issue of differences in parental behaviors that occur with demographic characteristics will be addressed in the subsequent section that deals with the relationship between family constellation, parental practices and child outcomes. The present section focuses on question of whether parental beliefs are related to parental practices over and above variance due to socioeconomic status and family constellation.

As indicated in Table 14, mothers' child development construct scores produced significant increments in the multiple correlation with mothers' behaviors for 26 of the 30 story behaviors and 25 of the 31 behaviors scored during the paper-folding task. Multiple correlations ranged from .26 to .54 for the story task behaviors and from .24 to .46 for the paper-folding behaviors evidenced by mothers. Thus, what mothers believe about how children develop was predictive of childrearing behaviors in two different contexts, even after demographic characteristics were taken into account.

Table 14

Multiple Correlations Between Mothers' Behaviors on Two Tasks and Socioeconomic Status, Family Constellation and Constructs of Development

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Length of interaction					
Control variables[a]			Control variables		
Socioeconomic status	4.12	.18*	Socioeconomic status	1.96	.13
Family constellation	.68	.21	Family constellation	2.01	.22
Interaction terms	.27	.22	Interaction terms	2.48	.30
Explanatory variables[b]			Explanatory variables		
Dependency	2.30	.30	Absorption	-2.14	.35
Absorption	-2.29	.35			
Self-regulation	2.04	.40			
Number of interaction units					
Control variables			Control variables		
Socioeconomic status	1.11	.10	Socioeconomic status	1.00	.09
Family constellation	.62	.14	Family constellation	1.19	.17
Interaction terms	.69	.18	Interaction terms	2.51	.26
Explanatory variables			Explanatory variables		
Dependency	3.23	.32	Absorption	-2.15	.33
Balance	3.03	.40	Impulsivity	-2.11	.38
Self-regulation	3.02	.46			
Absorption	-2.49	.49			
Conflict	-2.12	.52			
Child's performance rating					
(Not applicable for story task)			Control variables		
			Socioeconomic status	1.19	.10
			Family constellation	.70	.15
			Interaction terms	1.14	.20
			Explanatory variables		
			Creativity	-3.02	.34

Table 14 (Continued)

Story Task			Paper-Folding Task		
Behavior	*F* or *t*	R		*F* or *t*	R
No mental operational demand (MOD)					
Control variables			Control variables		
Socioeconomic status	3.66	.17	Socioeconomic status	1.78	.12
Family constellation	1.86	.24	Family constellation	.30	.14
Interaction terms	1.04	.28	Interaction terms	.84	.19
Explanatory variables			Explanatory variables		
Experimentation	-3.09	.38	Absorption	-2.34	.26
Self-regulation	-2.39	.43	Experimentation	-2.11	.32
Low level statements					
Control variables			Control variables		
Socioeconomic status	.45	.06	Socioeconomic status	.05	.02
Family constellation	.43	.11	Family constellation	.44	.09
Interaction terms	.38	.13	Interaction terms	2.53	.22
Explanatory variables			Explanatory variables		
Accumulation	-3.92	.39	Observation	2.28	.30
Self-regulation	2.51	.44			
Rigidity	2.16	.48			
Intermediate level statements					
Control variables			Control variables		
Socioeconomic status	.02	.01	Socioeconomic status	.50	.07
Family constellation	1.17	.14	Family constellation	.62	.12
Interaction terms	.68	.18	Interaction terms	.49	.15
Explanatory variables					
Readiness	-2.14	.26			
High level statements					
Control variables			Control variables		
Socioeconomic status	.89	.09	Socioeconomic status	1.75	.12
Family constellation	2.78	.23	Family constellation	.89	.17
Interaction terms	.83	.26	Interaction terms	.47	.19
Explanatory variables			Explanatory variables		
Negative affect	2,91	.35	Modelling/identification	2.11	.27
Dependency	2.75	.42			

Table 14 (Continued)

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Low level questions					
Control variables			Control variables		
Socioeconomic status	2.20	.14	Socioeconomic status	.53	.07
Family constellation	.56	.17	Family constellation	.40	.11
Interaction terms	3.43	.29*	Interaction terms	.17	.12
Explanatory variables			Explanatory variables		
			Empathy/contagion	3.29	.32
High level questions					
Control variables			Control variables		
Socioeconomic status	.33	.05	Socioeconomic status	2.45	.14
Family constellation	1.66	.17	Family constellation	.04	.15
Interaction terms	.15	.18	Interaction terms	1.47	.21
Explanatory variables			Explanatory variables		
Accumulation	3.03	.32	Modelling/identification	-2.22	.29
Conflict	2.18	.37			
Total number of statements					
Control variables			Control variables		
Socioeconomic status	.06	.02	Socioeconomic status	8.60	.26*
Family constellation	.21	.06	Family constellation	.08	.27
Interaction terms	.46	.11	Interaction terms	.69	.29
Explanatory variables			Explanatory variables		
Dependency	2.66	.22	Modelling/identification	2.18	.35
Accumulation	-2.46	.30			
Conflict	-2.00	.35			
Total number of questions					
Control variables			Control variables		
Socioeconomic status	.11	.03	Socioeconomic status	4.49	.19*
Family constellation	.25	.07	Family constellation	.03	.19
Interaction terms	.86	.14	Interaction terms	1.01	.23
Explanatory variables			Explanatory variables		
Accumulation	2.92	.30	Modelling/identification	-2.44	.30
			Empathy/contagion	2.17	.36

Table 14 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Number lower level MODs					
Control variables			Control variables		
Socioeconomic status	2.61	.15	Socioeconomic status	.34	.05
Family constellation	.74	.18	Family constellation	.52	.11
Interaction terms	1.59	.25	Interaction terms	.31	.13
Explanatory variables			Explanatory variables		
Self-regulation	2.41	.32	Empathy/contagion	3.96	.34
Accumulation	-2.26	.37	Conflict	-2.46	.38
			Absorption	-2.03	.42
Number intermediate level MODs					
Control variables			Control variables		
Socioeconomic status	.49	.06	Socioeconomic status	1.06	.10
Family constellation	.23	.09	Family constellation	.13	.11
Interaction terms	2.10	.21	Interaction terms	2.59	.23
Explanatory variables			Explanatory variables		
Structure in environment	2.22	.29	Infusion	2.15	.30
Number high level MODs					
Control variables			Control variables		
Socioeconomic status	.95	.09	Socioeconomic status	.87	.09
Family constellation	.94	.15	Family constellation	.03	.09
Interaction terms	.01	.15	Interaction terms	1.63	.19
Explanatory variables					
Accumulation	2.58	.28			
Structuring task					
Control variables			Control variables		
Socioeconomic status	.17	.04	Socioeconomic status	5.82	.22*
Family constellation	2.06	.19	Family constellation	.99	.25
Interaction terms	.70	.22	Interaction terms	1.55	.30
Explanatory variables					
Generalization	2.24	.29			
Innate factors	-2.23	.35			

Table 14 (Continued)

Story Task			Paper-Folding Task		
Behavior	*F* or *t*	R		*F* or *t*	R
Child management					
Control variables			Control variables		
Socioeconomic status	1.26	.10	Socioeconomic status	.13	.03
Family constellation	.97	.16	Family constellation	1.40	.16
Interaction terms	.25	.18	Interaction terms	.81	.20
Explanatory variables			Explanatory variables		
Conflict	2.85	.34	Absorption	-2.30	.27
Balance	2.49	.39	Modelling/identication	-2.11	.33
Structure in environment	-2.18	.44			
Reading					
Control variables					
Socioeconomic status	.78	.08			
Family constellation	.13	.09			
Interaction terms	.01	.09			
Explanatory variable					
Direct instruction	-2.04	.21			
Verbal approvals					
Control variables			Control variables		
Socioeconomic status	5.16	.21*	Socioeconomic status	1.73	.12
Family constellation	.21	.21	Family constellation	2.16	.22
Interaction terms	.15	.22	Interaction terms	.08	.23
Verbal disapprovals					
Control variables			Control variables		
Socioeconomic status	1.00	.09	Socioeconomic status	.83	.08
Family constellation	.81	.15	Family constellation	.68	.14
Interaction terms	.81	.19	Interaction terms	.03	.14
Explanatory variables			Explanatory variables		
Proximity/exposure	2.50	.29	Impulsivity	-2.12	.24
Creativity	-2.40	.36			

Table 14 (Continued)

Behavior	Story Task		Paper-Folding Task		
	F or t	R		F or t	R
Correction					
Control variables			Control variables		
Socioeconomic status	1.00	.09	Socioeconomic status	.89	.09
Family constellation	1.00	.16	Family constellation	1.00	.16
Interaction terms	1.00	.21	Interaction terms	.57	.18
Explanatory variables			Explanatory variables		
Stage	3.07	.42	Experimentation	-2.46	.32
Cognitive reorganization	2.60	.48	Dependency	2.10	.36
Positive affect	2.51	.52			
Informational feedback					
Control variables			Control variables		
Socioeconomic status	.09	.03	Socioeconomic status	.05	.02
Family constellation	.90	.13	Family constellation	.04	.03
Interaction terms	.73	.17	Interaction terms	.86	.13
Explanatory variables			Explanatory variables		
Creativity	-2.41	.30	Positive feedback	2.31	.25
Self-regulation	-3.75	.37			
Positive feedback	-3.00	.42			
Observation	3.13	.47			
Readiness	2.52	.51			
Experimentation	-2.12	.54			
Positive nonverbal supports					
Control variables			Control variables		
Socioeconomic status	.62	.07	Socioeconomic status	2.45	.14
Family constellation	.83	.14	Family constellation	3.04	.26*
Interaction terms	2.54	.25	Interaction terms	1.28	.30
Explanatory variables			Explanatory variables		
Readiness	3.75	.41	Modelling/identification	2.81	.37
			Self-regulation	-2.11	.42

Table 14 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Negative nonverbal supports					
Control variables			Control variables		
Socioeconomic status	.69	.08	Socioeconomic status	.85	.08
Family constellation	.52	.12	Family constellation	1.43	.18
Interaction terms	1.21	.19	Interaction terms	1.66	.24
Explanatory variables			Explanatory variables		
Creativity	3.06	.33	Negative affect	-2.42	.31
Impulsivity	2.69	.40	Confidence in beliefs	-2.09	.36
Innate factors	-1.97	.44			
Helping intrusions					
Control variables			Control variables		
Socioeconomic status	2.02	.13	Socioeconomic status	4.89	.19*
Family constellation	.50	.16	Family constellation	4.76	.33*
Interaction terms	.50	.18	Interaction terms	.06	.33
Explanatory variables			Explanatory variables		
Takeover intrusions					
Control variables (Not applicable)			Control variables		
			Socioeconomic status	2.14	.13
			Family constellation	.35	.15
			Interaction terms	5.29	.33*
Explanatory variables (Not applicable)			Explanatory variables		
Attention getting					
Control variables			Control variables		
Socioeconomic status	.23	.04	Socioeconomic status	.53	.07
Family constellation	.84	.13	Family constellation	.30	.10
Interaction terms	.55	.16	Interaction terms	.07	.10
Explanatory variables			Explanatory variables		
Dependency	2.77	.31	Readiness	3.95	.37
Creativity	2.04	.36	Positive feedback	-2.64	.43
			Dependency	2.08	.46

Table 14 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Diverting					
Control variables			Control variables		
Socioeconomic status	2.10	.13	Socioeconomic status	.00	.00
Family constellation	1.23	.19	Family constellation	.85	.12
Interaction terms	.17	.20	Interaction terms	.64	.16
Explanatory variables			Explanatory variables		
Proximity/exposure	-2.22	.28	Creativity	2.40	.25
			Observation	2.38	.32
			Empathy/contagion	2.09	.37
Out of contact					
Control variables			Control variables		
Socioeconomic status	.55	.07	Socioeconomic status	.74	.08
Family constellation	.44	.11	Family constellation	1.26	.17
Interaction terms	.24	.13	Interaction terms	.20	.18
Explanatory variables			Explanatory variables		
Empathy/contagion	2.26	.23	Readiness	-2.09	.26
Direct instruction	-2.54	.30			
Rigidity	-2.91	.37			
Stage	1.99	.41			
No time for child response					
Control variables			Control variables		
Socioeconomic status	.01	.01	Socioeconomic status	.05	.02
Family constellation	1.20	.14	Family constellation	.47	.09
Interaction terms	1.20	.20	Interaction terms	1.29	.17
Explanatory variables			Explanatory variables		
Creativity	2.49	.30	Experimentation	2.07	.26
Proximity/exposure	2.34	.36			
Readiness	2.15	.40			
Child actively engaged in interaction					
Control variables			Control variables		
Socioeconomic status	.02	.01	Socioeconomic status	1.25	.10
Family constellation	.64	.11	Family constellation	.47	.14
Interaction terms	.68	.15	Interaction terms	2.17	.23
Explanatory variables			Explanatory variables		
Positive feedback	-3.06	.31	Negative feedback	2.37	.30
			Readiness	2.02	.35

Table 14 (Continued)

	Story Task			Paper-Folding Task	
Behavior	*F* or *t*	R		*F* or *t*	R
Child actively engaged in other activity					
Control variables			Control variables		
Socioeconomic status	.01	.01	Socioeconomic status	.32	.05
Family constellation	.07	.04	Family constellation	1.35	.16
Interaction terms	.17	.06	Interaction terms	.74	.19
			Explanatory variables		
			Structure in environment	2.81	.28
			Readiness	2.19	.34
Child passively engaged in interaction					
Control variables			Control variables		
Socioeconomic status	.07	.02	Socioeconomic status	.70	.08
Family constellation	.20	.06	Family constellation	.97	.15
Interaction terms	.50	.11	Interaction terms	.96	.20
Explanatory variables			Explanatory variables		
Positive feedback	3.73	.32	Modelling/identification	3.71	.36
Rigidity	2.49	.39	Confidence in beliefs	-2.10	.40
			Negative feedback	-2.00	.44

[a] *R*'s for control variables that are significant at the .05 level are indicated by an asterisk.

[b] *R*'s for all explanatory variables included in this table are significant at the .05 level.

Results of regression analyses on fathers' constructs of development and fathers' behaviors are presented in Table 15. A significant relationship between socioeconomic status and fathers' behaviors was obtained for three of the variables (story: low level statements; paper: child management, negative nonverbal supports). Four behavior variables varied with family constellation (story: low level questions, high level questions, low level mental operational demands, and high level mental operational demands) and a significant relationship between the demographic interaction terms and behaviors was obtained for 10 variables (story: length of interaction, out of contact, number of questions, reading, diverting; paper: intermediate level questions, intermediate level mental operational demands; child management, correction, informational feedback).

Fathers' child development construct scores produced significant increments in multiple correlation coefficients after demographic variables were forced in for 27 of the 32 story behavior variables and 31 of the 32 paper-folding behavior variables analyzed. Multiple correlations ranged from .25 to .46 for the story task and from .24 to .50 for the paper-folding behaviors evidenced by fathers. Thus, fathers' construct of development scores were found to be related to their behaviors during interactions with their child after taking into account their association with family constellation and socioeconomic factors.

With regard to specific child development constructs that were related to parental behaviors, post hoc explanations of why particular beliefs were related to particular practices are possible. For example, note that fathers' beliefs that children acquire knowledge through a process of experimentation, and through positive feedback to the child, and constructions of the child as

Table 15

Multiple Correlations Between Fathers' Behaviors on Two Tasks and Socioeconomic Status, Family Constellation and Constructs of Development

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Length of interaction					
Control variables[a]			Control variables		
Socioeconomic status	.31	.05	Socioeconomic status	.03	.02
Family constellation	1.16	.15	Family constellation	.12	.05
Interaction terms	2.99	.27*	Interaction terms	.42	.10
Explanatory variables[b]			Explanatory variables		
Absorption	-2.11	.33	Experimentation	2.75	.29
			Absorption	-2.65	.35
			Positive feedback	2.76	.40
			Confidence in beliefs	-2.15	.44
			Impulsivity	1.98	.47
Number of interaction units					
Control variables			Control variables		
Socioeconomic status	.02	.01	Socioeconomic status	.11	.03
Family constellation	1.18	.14	Family constellation	.45	.09
Interaction terms	2.32	.24	Interaction terms	.41	.13
Explanatory variables			Explanatory variables		
Absorption	-2.04	.30	Impulsivity	2.77	.35
			Absorption	-2.23	.40
			Cognitive reorganization	2.79	.44
No mental operational demand (MOD)					
Control variables			Control variables		
Socioeconomic status	.28	.05	Socioeconomic status	2.28	.14
Family constellation	1.02	.14	Family constellation	1.18	.20
Interaction terms	.58	.17	Interaction terms	.43	.21
Explanatory variables			Explanatory variables		
Modelling/identification	-2.39	.28	Self-regulation	2.33	.31
			Observation	-2.10	.36

Table 15 (Continued)

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Low level statments					
Control variables			Control variables		
Socioeconomic status	3.76	.18*	Socioeconomic status	.62	.70
Family constellation	.51	.20	Family constellation	2.46	.21
Interaction terms	1.67	.26	Interaction terms	1.42	.26
			Explanatory variables		
			Infusion	3.17	.35
			Proximity/exposure	2.45	.41
Intermediate level statements					
Control variables			Control variables		
Socioeconomic status	.04	.02	Socioeconomic status	1.70	.12
Family constellation	1.69	.17	Family constellation	.05	.12
Interaction terms	1.71	.24	Interaction terms	.52	.16
Explanatory variables			Explanatory variables		
Generalization	2.25	.30	Modelling/identification	2.28	.26
Accumulation	-1.99	.35			
High level statements					
Control variables			Control variables		
Socioeconomic status	3.05	.16	Socioeconomic status	.00	.00
Family constellation	2.61	.26	Family constellation	1.54	.16
Interaction terms	2.01	.31	Interaction terms	.16	.17
Explanatory variables			Explanatory variables		
Accumulation	-2.96	.38	Observation	2.68	.29
Proximity/exposure	-2.37	.43	Creativity/imagination	2.60	.36
Dependency	2.05	.46	Positive feedback	2.12	.40
Low level questions					
Control variables			Control variables		
Socioeconomic status	.50	.06	Socioeconomic status	.10	.03
Family constellation	3.77	.25*	Family constellation	.38	.09
Interaction terms	1.53	.30	Interaction terms	2.02	.20
Explanatory variables			Explanatory variables		
Experimentation	2.93	.36	Positive affect	3.17	.32
Confidence in beliefs	-2.42	.42	Absorption	2.57	.37
			Creativity/imagination	-2.12	.41
			Stage	-2.12	.45

Table 15 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Intermediate level questions					
Control variables			Control variables		
Socioeconomic status	3.59	.17	Socioeconomic status	1.97	.13
Family constellation	.21	.18	Family constellation	.56	.16
Interaction terms	.51	.20	Interaction terms	3.89	.30*
			Explanatory variables		
			Generalization	3.08	.40
High level questions					
Control variables			Control variables		
Socioeconomic status	.05	.02	Socioeconomic status	1.28	.10
Family constellation	3.83	.25*	Family constellation	.59	.14
Interaction terms	1.47	.29	Interaction terms	.64	.18
Explanatory variables			Explanatory variables		
Structure in environment	-1.98	.34	Stage	4.21	.38
			Absorption	-2.53	.43
Number of statements					
Control variables			Control variables		
Socioeconomic status	1.04	.09	Socioeconomic status	.05	.02
Family constellation	.53	.13	Family constellation	.89	.12
Interaction terms	1.30	.20	Interaction terms	.48	.15
Explanatory variables			Explanatory variables		
Accumulation	-2.08	.28	Accumulation	-3.00	.32
Empathy/contagion	2.02	.33	Creativity/imagination	2.14	.37
Number of questions					
Control variables			Control variables		
Socioeconomic status	.00	.01	Socioeconomic status	.03	.02
Family constellation	.18	.06	Family constellation	.77	.12
Interaction terms	3.63	.25*	Interaction terms	.25	.13
			Explanatory variables		
			Positive affect	2.20	.27
			Accumulation	1.96	.33

Table 15(Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Number of low level MODs					
Control variables			Control variables		
Socioeconomic status	3.38	.16	Socioeconomic status	.00	.00
Family constellation	4.78	.32*	Family constellation	.56	.10
Interaction terms	.11	.32	Interaction terms	1.38	.18
Explanatory variables			Explanatory variables		
Negative affect	-1.99	.36	Positive affect	3.33	.30
			Infusion	3.67	.40
			Proximity/exposure	3.24	.48
Number of intermediate level MODs					
Control variables			Control variables		
Socioeconomic status	2.14	.13	Socioeconomic status	.47	.06
Family constellation	1.01	.19	Family constellation	.54	.11
Interaction terms	1.91	.26	Interaction terms	3.98	.28*
			Explanatory variables		
			Generalization	2.90	.38
Number of high level MODs					
Control variables			Control variables		
Socioeconomic status	.24	.04	Socioeconomic status	1.07	.09
Family constellation	5.13	.29*	Family constellation	1.15	.17
Interaction terms	2.32	.34	Interaction terms	.52	.19
Explanatory variables			Explanatory variables		
Structure in environment	-2.18	.39	Stage	3.70	.38
			Absorption	-2.55	.44
			Experimentation	2.09	.47
Structuring task					
Control variable			Control variable		
Socioeconomic status	1.09	.10	Socioeconomic status	.63	.07
Family constellation	.47	.13	Family constellation	.34	.11
Interaction terms	1.47	.20	Interaction terms	.41	.14
Explanatory variables			Explanatory variables		
Direct instruction	2.26	.30	Accumulation	-3.79	.32
Experimentation	-2.69	.36	Infusion	-2.37	.37
Positive feedback	2.23	.41	Absorption	2.07	.41

Table 15 (Continued)

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Child management					
Control variables			Control variables		
Socioeconomic status	.14	.03	Socioeconomic status	5.46	.21*
Family constellation	2.16	.19	Family constellation	2.37	.28
Interaction terms	.24	.20	Interaction terms	3.07	.36*
Explanatory variables			Explanatory variables		
Balance	2.76	.31	Experimentation	2.39	.42
Innate factors	-1.96	.35	Accumulation	1.97	.45
Reading					
Control variables					
Socioeconomic status	.55	.07			
Family constellation	.16	.09			
Interaction terms	3.58	.26*			
Explanatory variables					
Negative feedback	-2.17	.32			
Verbal approvals					
Control variables			Control variables		
Socioeconomic status	.01	.01	Socioeconomic status	1.34	.11
Family constellation	.30	.07	Family constellation	.50	.14
Interaction terms	.30	.10	Interaction terms	1.08	.20
			Explanatory variables		
			Creativity/imagination	-2.26	.28
Verbal disapprovals					
Control variables			Control variables		
Socioeconomic status	1.03	.09	Socioeconomic status	.04	.02
Family constellation	.77	.15	Family constellation	.15	.05
Interaction terms	.26	.16	Interaction terms	.15	.08
Explanatory variables			Explanatory variables		
Negative feedback	-2.78	.29	Positive affect	2.52	.24
Impulsivity	2.03	.34			

Table 15 (Continued)

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Correction					
Control variables			Control variables		
Socioeconomic status	.11	.03	Socioeconomic status	2.28	.14
Family constellation	.80	.12	Family constellation	1.20	.20
Interaction terms	1.50	.20	Interaction terms	4.21	.32*
Explanatory variables			Explanatory variables		
Structure in environment	-2.27	.29	Direct instruction	-3.77	.41
			Readiness	2.63	.47
			Observation	-2.04	.50
Informational feedback					
Control variables			Control variables		
Socioeconomic status	.01	.01	Socioeconomic status	.47	.06
Family constellation	.18	.06	Family constellation	.05	.07
Interaction terms	1.25	.16	Interaction terms	3.12	.24*
Explanatory variables			Explanatory variables		
Creativity	-2.29	.24	Cognitive reorganization	2.93	.33
Modelling/identification	-2.16	.30	Positive feedback	-2.38	.39
Infusion	-1.99	.35	Observation	-2.09	.43
Positive nonverbal supports					
Control variables			Control variables		
Socioeconomic status	1.08	.10	Socioeconomic status	1.36	.11
Family constellation	.91	.16	Family constellation	1.06	.17
Interaction terms	1.34	.22	Interaction terms	.45	.19
Explanatory variables			Explanatory variables		
Structure in environment	3.23	.36	Readiness	-2.17	.27
Negative nonverbal supports					
Control variables			Control variables		
Socioeconomic status	2.02	.13	Socioeconomic status	4.98	.20*
Family constellation	.50	.16	Family constellation	.35	.22
Interaction terms	.50	.18	Interaction terms	.95	.25
Explanatory variables			Explanatory variables		
Absorption	2.39	.28	Modelling/identification	2.56	.33
			Readiness	2.68	.39
			Negative feedback	-2.13	.43

Table 15 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Helping intrusions					
Control variables			Control variables		
Socioeconomic status	2.07	.13	Socioeconomic status	.06	.02
Family constellation	2.07	.23	Family constellation	.16	.06
Interaction terms	2.11	.29	Interaction terms	1.02	.14
Explanatory variables			Explanatory variables		
Experimentation	2.71	.37	Stage	3.81	.30
			Accumulation	-2.54	.38
			Balance	2.67	.42
			Generalization	-2.28	.46
Takeover intrusions					
			Socioeconomic status	.92	.09
			Family constellation	1.74	.19
			Interaction terms	.18	.20
			Explanatory variables		
			Logic/reasoning	2.65	.29
			Self-regulation	-2.19	.36
			Experimentation	-2.11	.41
Attention getting					
Control variables			Control variables		
Socioeconomic status	.02	.01	Socioeconomic status	1.40	.11
Family constellation	.66	.11	Family constellation	.21	.12
Interaction terms	.65	.15	Interaction terms	.18	.14
Explanatory variables			Explanatory variables		
Negative affect	-2.21	.25	Stage	2.42	.25
			Intrusion	2.20	.31
Diverting					
Control variables			Control variables		
Socioeconomic status	1.88	.12	Socioeconomic status	1.21	.10
Family constellation	1.41	.20	Family constellation	.32	.13
Interaction terms	3.42	.31*	Interaction terms	.17	.14
			Explanatory variables		
			Observation	-2.15	.23
			Balance	-2.12	.30

Table 15 (Continued)

Story Task			Paper-Folding Task		
Behavior	F or t	R		F or t	R
Out of contact					
Control variables			Control variables		
Socioeconomic status	1.26	.10	Socioeconomic status	.21	.04
Family constellation	1.65	.19	Family constellation	1.86	.18
Interaction terms	4.05	.32*	Interaction terms	.20	.19
Explanatory variables					
Cognitive reorganization	3.18	.40			
Proximity/exposure	2.25	.44			
No time for child response					
Control variables			Control variables		
Socioeconomic status	2.64	.15	Socioeconomic status	.08	.03
Family constellation	2.38	.24	Family constellation	.40	.09
Interaction terms	1.28	.28	Interaction terms	.18	.10
Explanatory variables			Explanatory variables		
Logic/reasoning	2.41	.36	Rigidity	2.68	.25
Creativity/imagination	-2.23	.41	Experimentation	2.97	.33
			Confidence in beliefs	-2.11	.38
Child actively engaged in interaction					
Control variables			Control variables		
Socioeconomic status	.02	.01	Socioeconomic status	.75	.08
Family constellation	1.22	.14	Family constellation	.02	.08
Interaction terms	2.04	.23	Interaction terms	.15	.10
Explanatory variables			Explanatory variables		
Innate factors	2.58	.32	Modelling/identification	-2.95	.25
Infusion	-2.34	.38	Rigidity	-2.42	.33
			Negative affect	-2.48	.38
			Positive feedback	-2.01	.42
Child actively engaged in other activity					
Control variables			Control variables		
Socioeconomic status	1.30	.10	Socioeconomic status	.10	.03
Family constellation	.69	.15	Family constellation	.73	.12
Interaction terms	.32	.17	Interaction terms	1.24	.19
Explanatory variables			Explanatory variables		
Direct instruction	2.40	.25	Negative affect	2.03	.26
Dependency	-2.25	.32			

Table 15 (Continued)

	Story Task			Paper-Folding Task	
Behavior	F or t	R		F or t	R
Child passively engaged in interaction					
Control variables			Control variables		
Socioeconomic status	.15	.04	Socioeconomic status	1.33	.11
Family constellation	1.67	.17	Family constellation	.25	.12
Interaction terms	2.24	.26	Interaction terms	1.09	.13
Explanatory variables			Explanatory variables		
Infusion	2.87	.36	Modelling/identification	2.82	.29
Child passively engaged in other activity					
Control variables			Control variables		
Socioeconomic status	.93	.09	Socioeconomic status	.16	.04
Family constellation	.27	.11	Family constellation	.38	.09
Interaction terms	.77	.16	Interaction terms	.68	.14
Explanatory variables			Explanatory variables		
Modelling/identification	3.23	.28	Positive feedback	2.69	.28
Absorption	2.78	.37			

[a] R's for control variables that are significant at the .05 level are indicated by an asterisk.

[b] R's for all explanatory variables included in this table are significant at the .05 level.

an impulsive being were positively related to length of interaction on the paper-folding task. Fathers' confidence in their beliefs and beliefs that children learn through absorption were negatively related to the length of the interaction (see Table 15). These relationships make intuitive sense. If a father behaves in accord with his constructs, the father-child interaction would be expected to last longer when the father allows the child to experiment and/or provide feedback to the child. Similarly, a father who simply conveys facts because he believes the child learns through absorption of the information without processing it, would likely take less time to complete the task. If a parent is confident that he understands how children learn and develop, then he can quickly proceed to teach the task, thus the negative relationship between confidence and length of interaction. With regard to belief in an impulsive nature of the child, it is possible that fathers believe in such a construct because their children are indeed impulsive or easily distracted from the task at hand. If this is the case, teaching the child a particular task would be more time consuming because of the need to continually get the child "back on the track." Support for such an interpretation is provided by a significant positive correlation between fathers' belief in impulsivity of the child and evidence of attention-getting behaviors on the paper task ($r = .20$; $\underline{p} < .01$).

Similarly, constructs central to the theoretical framework underlying the distancing hypothesis often appeared as predictors of parents' distancing behaviors (variables of "no mental operational demand" through "number of high level mental operational demands"). For example, mothers' belief in processes of experimentation and self-regulation were negatively related to mothers' scores for not placing mental operational demands on the child during the story task (see Table 14). If mothers do not think that children develop through self-regulatory processes and their own experimentations (an assumption within distancing theory; Sigel & Cocking, 1977), it would be inconsistent to place demands on their own child to perform mental transformations. Fathers' use of high level mental operational demands on the paper-folding task was positively related to belief in stages of development and the process of experimentation, and negatively related to belief in absorption. This pattern is also consistent with distancing theory which posits that children construct knowledge in a stage-like sequence based on their own internal action and do not simply absorb knowledge presented to them in a directive fashion. Thus, this constitutes another example of an explanation of the obtained relationships between parental beliefs and practices.

To summarize thus far, results of these analyses confirm the hypothesis that parental constructs of child development states and processes are related to parental practices above their association with family constellation and SES factors. Results from the current sample of 120 families indicate that there are mediating factors internal to the parent from which parental childrearing styles may emerge, and which may help to account for variation in parental practices that ultimately impact the cognitive development of the child.

Within the context of the family unit, it has been hypothesized that the child's level of cognitive development and the beliefs of one's spouse, in addition to the demographic characteristics, affect the content of the parent's belief system (see Figure 1, p. 8). As a preliminary step in the investigation of these interrelationships, multiple regressions involving both parents' beliefs as predictors to each parent's behaviors were conducted. Results indicated that one parent's beliefs may be related to the other parent's behavior.

Fathers' scores on child development constructs produced significant multiple correlation coefficients with mothers' behaviors on the story task (24 of 30 variables) and the paper task (23 of 31 variables) when both mothers' and fathers' beliefs were entered as predicted. Conversely, mothers' beliefs were significantly related to fathers' behaviors for 21 of the story behavior variables and 24 of the paper-folding behavior variables. The causal analysis, presented in a subsequent section, was used to determine if their relationship involved a direct effect of spouses' beliefs on one's own behavior or if one partner affected the beliefs of the other. That is, a parent's behaviors may be only indirectly affected by the beliefs of the spouse in the sense that the parent's own beliefs are affected by the spouse's beliefs, or parents may sometimes act in accord with spouses' beliefs rather than their own beliefs.

Communication strategy beliefs and parental behaviors

Four sets of multiple regressions were conducted with the same behavior variables as above serving as dependent variables, but with scores for communication strategy beliefs as explanatory variables. As with the previous regressions, family constellation, socioeconomic status and their interaction terms were entered first in order to determine whether communication strategy beliefs predicted parental behaviors after demographic characteristics were considered.

With regard to mothers' behaviors, a significant relationship with socioeconomic status was obtained for six of the behavior variables (story: length of interaction, verbal approvals; paper: structuring task, helping intrusions, number of statements, number of questions). Family constellation was related to two of the behavior variables (paper: positive nonverbal supports, helping intrusions) and interaction terms correlated with two behavior variables (story: low level questions; paper: takeover intrusions).

Mothers' scores on communication beliefs variables produced significant increments in the multiple correlation coefficient for only 16 of the 32 story behaviors and 14 of the 32 paper-folding behavior variables. Multiple correlations ranged from .23 to .38 for the story task behaviors and from .29 to .44 for the paper task. In all but two cases, only one or two belief variables produced significant increments in the multiple correlations. Thus, mothers' communication strategy beliefs did slightly improve prediction of behaviors for some variables, but on the whole, information about parental communication beliefs did not make a significant contribution to prediction of behaviors on either observation task.

Results of the analysis of fathers' communication belief and behavior scores were similar. For the 32 story behavior variables, communication belief scores produced significant increments in the multiple correlation for the variables. Multiple correlations ranged from .26 to .42. Communication strategy beliefs produced significant increments for 17 of the 32 behavior variables analyzed for the paper-folding task. The range of the correlation coefficients after all significantly related belief variables were stepped in was from .20 to .44. As was the case for mothers' scores, only one or two belief variables were sufficiently related to behaviors to warrant inclusion as predictors in most cases.

In summary, results of the analysis of the relation between parents' communication strategy beliefs and parents' behaviors on two observation tasks were not as strong as those relative to parents' beliefs about child development states and processes. It appears, then, that parents' constructs of child development provide more information about how parents are likely to behave with their children than parents' beliefs and predictions about the way they interact.

Descriptive Analysis of Parental Behaviors

In this section, attention will be directed initially to a description of the parent behaviors employed in each of the two teaching situations (storytelling and paper folding). The first results to be reported were obtained from descriptive and exploratory correlational analyses of parental behavior during the two observation tasks. Following presentation of these results, the relationship between parental behaviors and children's representational competence will be discussed.

Comparison of parental behaviors across demographic groups and tasks: Factors that may influence parent behaviors during interactions with a child include family constellation, SES, sex of the parent, sex of the child and the task to be accomplished during the course of the interaction. There is evidence that parental behaviors are in fact influenced by all of the above factors, including the context in which the behavior occurs, i.e., the task the parent and child are involved in (Grusec & Kuczynski, 1980; Bell, Johnson, McGillicuddy-DeLisi, & Sigel, Note 4). In order to investigate the influence of these factors with the current sample of parents, a series of 3 x 2 x 2 x 2 x 2 (family constellation x SES x sex of parent x sex of child x task) analyses of variance with a repeated measure on the last factor were conducted on parent behavior scores. A variety of significant main and interaction effects were obtained, which are listed in Table 16.

As indicated in Table 16, main effects for family constellation were significant for only three variables, contrary to predictions. Scheffé tests indicated that parents of an only child used low level mental operational demands more often and high level questions and helping behaviors less often than parents of three children (both near- and far-spacing). Means and standard deviations of the behavior variables are presented in Table 17 by task, sex of parent, family constellation, SES and sex of child.

Main effects for SES were obtained for only 5 of the 31 variables: frequency of no mental operational demands, structuring behaviors, verbal approvals, negative nonverbal emotional supports and number of statements. Middle-class parents evidenced higher frequencies of no mental operational demands and verbal approvals than working-class parents, while the reverse trend was observed for the other three variables. Main effects for sex of parent were obtained for length of interaction, number of interaction units, verbal disapprovals, helping intrusions, no time for a child response and number of questions. Means of fathers were higher than those of mothers for all of these variables. Number of low level statements, number of low level mental operational demands and active nonengagement of the child varied with sex of the child, and frequencies were higher for male children than for female children on each variable.

A main effect for task was obtained for 21 of the 31 variables that were analyzed. Scores for length of interaction, number of interaction units, low level statements, low level questions, high level statements, high level questions, diverting behaviors, number of questions, low level mental operational demands and passive engagement of the child were higher for the story task than for the paper task. Structuring behaviors, verbal approvals, verbal disapprovals, corrections, negative nonverbal supports, helping, attention-getting, no time for child responses, active child engagement, and statements occurred more often during the paper task than during the story task.

Although task was clearly the major factor along which parent behaviors varied, many interaction effects involving family constellation, SES and sex of parents and children were obtained. With regard to the distancing variables, family constellation was involved in an interaction for low level statements (SES x family constellation x sex of parent), low level questions (SES x family constellation x sex of parent), intermediate level questions (task x SES x family constellation), high level statements (family constellation x sex of parent) and high level questions (family constellation x sex of parent x sex of child). Middle-class mothers with near spacing and middle-class fathers with far spacing used fewer low level statements than other parents. Working-class fathers of an only child evidenced more low level questions than working-class fathers with far spacing and middle-class mothers with far spacing. Working-class parents of an only child used fewer intermediate level questions than other parents and fathers of an only child used fewer high level statements than other parents. Mothers of an only child who was female used fewer high level questions than other parents. Thus, variation in parental teaching strategies with family constellation factors appears to occur when other factors such as SES and sex of parent are included.

The task in which the parent and child are engaged, however, appeared to be the most salient dimension along which parental behaviors varied. Correlations between behavior scores on the two tasks were computed to assess whether parents evidenced any consistent pattern across the two tasks. While the magnitude of relationships was generally low (ranging from .15-.40; $r \geq .15 = p \leq .05$), the pattern of relationships obtained for fathers and for mothers was somewhat different. Behavior variables that were correlated across the two tasks are presented in Table 18 for mothers and for fathers.

Table 16

Significant Main and Interaction Effects (p's $< .05$) Obtained from a 3 x 2 x 2 x 2 x 2 (family constellation^a x SES x sex of parent x sex of child x task) ANOVA

Dependent Variables	Main Effects	Interaction Effects
Length of interaction	Sex of parent	
	Task	
Number of interaction units	Sex of parent	
	Task	
No MOD's	SES	FC x Sex of parent
Low Statements	Sex of child	Sex of child x Sex of parent
		SES x Sex of child x Sex of parent
		SES x FC x Sex of parent
	Task	Task x Sex of child x Sex of parent
Low questions		Sex of child x Sex of parent
		SES x FC x Sex of parent
	Task	
Intermediate statements		Task x Sex of parent
Intermediate questions		SES x FC
		Task x SES x FC
High statements		FC x Sex of parent
	Task	Task x SES
High questions	FC	
		Sex of child x Sex of parent
		Sex of child x FC x Sex of parent
	Task	
Structuring task	SES	Sex of child x SES x FC
	Task	Task x SES
Child management		Task x SES x Sex of parent
Verbal approvals	SES	
	Task	Task x Sex of parent
Verbal disapprovals	Sex of parent	
	Task	Task x Sex of parent

Table 16 (Continued)

Dependent Variables	Main Effects	Interaction Effects
Correction of child		Sex of child x Sex of parent
		SES x FC x Sex of parent
	Task	Task x Sex of parent
		Task x Sex of child x Sex of parent
Feedback		Task x SES x FC
Positive nonverbal supports	N.S.	N.S.
Negative nonverbal supports	SES	Sex of child x SES x FC
		Sex of child x SES x Sex of parent
		Sex of child x Sex of parent
	Task	Task x Sex of child
		Task x Sex of child x Sex of parent
Helping intrusions	FC	
	Sex of parent	Sex of child x FC x Sex of parent
	Task	Task x Sex of parent
		Task x FC x Sex of parent
Attention getting	Task	
Diverting		SES x Sex of parent
	Task	Task x Sex of parent
Out of contact		Sex of child x FC
No time for child's response	Sex of parent	
	Task	
Child actively engaged with parent		Sex of child x FC
	Task	Task x SES x FC
Child actively engaged in other activity	Sex of child	
Child passively engaged with parent		Sex of chils x SES
		Sex of child x FC
	Task	
Child passively engaged in other activity		Task x Sex of child x Sex of parent
Number of statements	SES	
	Task	Task x Sex of child x Sex of parent
		Task x SES x Sex of parent

Table 16 (Continued)

Dependent Variables	Main Effects	Interaction Effects
Number of questions	Sex of parent Task	
Number of low level mental operational demands	Sex of child	Sex of child x Sex of parent Sex of child x SES x Sex of parent Sex of child x FC x Sex of parent
	FC	
	Task	Task x SES
Number of intermediate level mental operational demands		SES x FC
Number of high level mental operational demands		Sex of child x Sex of parent
	Task	Task x FC

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[a] FC = Family constellation

Table 17

Mean Number (and S.D.) of Selected Parental Behaviors by Task, Sex of Parent, Family Configuration, SES, and Sex of Child

Story Task—Mothers

	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Mothers on Story Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
Variable	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Time of Interaction	298.80	270.00	331.90	284.40	302.60	253.60	319.50	257.10	259.10	239.70	289.70	308.20	287.10
	(56.86)	(67.08)	(92.50)	(97.37)	(81.75)	(99.80)	(131.44)	(58.65)	(61.35)	(67.51)	(104.59)	(117.01)	(89.25)
# Interaction Units	75.50	78.60	78.60	68.76	86.10	57.70	92.40	77.80	73.00	57.90	68.40	81.60	74.68
	(17.79)	(27.78)	(27.78)	(35.47)	(30.42)	(36.22)	(44.39)	(17.11)	(46.39)	(27.05)	(34.53)	(38.64)	(33.33)
No Mental Operational Demand	2.50	2.10	2.10	2.50	2.40	1.70	2.30	1.80	2.10	2.20	3.10	3.20	2.44
	(1.58)	(1.29)	(1.29)	(1.80)	(1.96)	(1.49)	(1.42)	(1.14)	(1.45)	(1.55)	(1.66)	(1.14)	(1.60)
Low Level Statements	2.50	2.00	2.00	1.60	2.30	1.50	1.70	1.50	2.20	1.60	1.60	2.50	1.93
	(2.27)	(1.76)	(1.76)	(1.08)	(1.49)	(1.51)	(1.42)	(1.18)	(1.87)	(1.43)	(1.08)	(1.08)	(1.49)
Low Level Questions	5.10	3.60	3.60	3.60	3.40	3.50	3.90	4.20	4.20	5.00	2.60	2.60	3.83
	(2.73)	(2.41)	(2.41)	(2.17)	(1.65)	(1.65)	(2.42)	(2.30)	(2.97)	(1.44)	(1.35)	(1.65)	(2.28)
Intermediate Level Statements	.60	.80	.80	.50	.80	.50	.80	.30	.50	.10	.40	.60	.54
	(.84)	(.63)	(.63)	(.71)	(.92)	(.53)	(1.03)	(.48)	(.71)	(.32)	(.70)	(.84)	(.72)
Intermediate Level Questions	1.20	1.40	1.40	1.30	1.20	1.90	1.80	.80	1.10	.90	1.60	2.00	1.39
	(1.48)	(.97)	(.97)	(1.34)	(1.40)	(1.79)	(1.87)	(.79)	(1.20)	(.57)	(1.58)	(1.25)	(1.32)
High Level Statements	1.10	1.40	1.40	1.00	1.40	.70	1.70	1.30	.50	.40	.90	.80	1.03
	(1.20)	(1.35)	(1.35)	(1.05)	(1.90)	(1.57)	(1.34)	(1.42)	(.71)	(.70)	(1.37)	(1.03)	(1.27)
High Level Questions	2.90	3.20	3.20	3.90	3.40	4.50	2.90	5.10	4.00	4.30	4.00	4.50	3.83
	(2.60)	(2.49)	(2.49)	(2.81)	(1.43)	(2.46)	(1.60)	(2.08)	(2.91)	(2.50)	(.82)	(2.22)	(2.24)
Structuring Task	1.00	.40	.40	1.10	.80	.90	1.00	1.10	1.60	1.30	1.30	1.10	1.04
	(1.33)	(.70)	(.70)	(.99)	(.92)	(1.29)	(.94)	(.88)	(.70)	(1.34)	(1.16)	(1.85)	(1.11)
Child Management	.40	.10	.10	.20	.20	.70	.10	.30	.20	.10	.10	.10	.22
	(.70)	(.32)	(.32)	(.42)	(.42)	(1.64)	(.32)	(.95)	(.42)	(.32)	(.32)	(.32)	(.65)
Reading	2.70	5.00	5.00	4.30	4.10	4.10	3.80	3.60	3.60	4.10	4.40	2.60	3.76
	(1.42)	(2.16)	(2.16)	(3.37)	(1.45)	(1.97)	(1.75)	(2.27)	(1.96)	(3.18)	(1.90)	(1.35)	(2.16)
Verbal Approvals	1.70	1.40	1.40	1.90	2.10	1.00	2.20	1.70	1.60	1.30	2.10	2.00	1.81
	(1.25)	(1.27)	(1.27)	(1.79)	(2.08)	(.82)	(1.40)	(1.25)	(1.43)	(.95)	(1.73)	(1.49)	(1.42)
Verbal Disapprovals	.10	.00	.00	.10	.30	.20	.20	.00	.30	.10	.00	.20	.13
	(.32)	(.00)	(.00)	(.32)	(.68)	(.42)	(.42)	(.00)	(.48)	(.32)	(.00)	(.42)	(.37)
Feedback to Child	1.40	.70	.70	1.00	1.40	.60	.40	.70	.80	1.20	[illegible]	1.30	.98
	(1.08)	(.48)	(.48)	(1.41)	(2.17)	(.97)	(.52)	(.82)	(.92)	(1.14)	(.99)	(1.42)	(1.22)

Table 17 (Continued)

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Mothers on Story Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Positive Non-verbal Supports	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.10 (.32)	.10 (.32)	.10 (.32)	.00 (.00)	.00 (.00)	.10 (.32)	.00 (.00)	.00 (.00)	.08 (.35)
Negative Non-verbal Supports	.10 (.32)	.10 (.32)	.10 (.32)	.00 (.00)	.00 (.00)	.20 (.42)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.05 (.22)
Attention Getting	2.80 (1.99)	2.80 (2.20)	2.80 (2.20)	2.40 (1.78)	2.10 (1.37)	3.30 (2.79)	3.40 (1.84)	3.20 (2.53)	2.70 (1.57)	3.20 (1.90)	3.00 (1.63)	3.60 (1.80)	2.95 (1.91)
Diverting	.30 (.68)	.20 (.63)	.20 (.63)	.30 (.48)	.20 (.63)	.30 (.68)	.30 (.48)	.60 (.84)	.10 (.32)	.70 (1.16)	.70 (1.25)	.70 (.82)	.40 (.76)
Out of Contact	.50 (.97)	.00 (.00)	.00 (.00)	.30 (.48)	.10 (.32)	.20 (.42)	.00 (.00)	.30 (.48)	.00 (.00)	.40 (.97)	.10 (.32)	.00 (.00)	.17 (.49)
No Time for Child Response	1.10 (.74)	.30 (.48)	.30 (.48)	.90 (1.52)	.50 (.97)	.60 (1.08)	.50 (.71)	.60 (.70)	.90 (.74)	.80 (.79)	.40 (.97)	.70 (1.16)	.71 (.94)
Child Actively Engaged with Parent	11.40 (3.20)	7.80 (2.20)	7.80 (2.20)	8.50 (1.84)	.50 (3.50)	10.40 (1.71)	9.40 (3.27)	9.70 (2.36)	9.10 (1.29)	11.30 (3.20)	11.00 (2.87)	10.30 (2.91)	10.05 (2.77)
Child Actively Engaged in Other Activity	.40 (.70)	1.30 (1.49)	1.30 (1.49)	1.10 (1.29)	.40 (.97)	1.30 (1.16)	.80 (1.55)	1.10 (1.29)	.80 (1.69)	1.00 (1.63)	.80 (1.14)	.60 (.70)	.86 (1.22)
Child Passively Engaged with Parent	6.30 (2.63)	9.20 (2.10)	9.20 (2.10)	8.40 (3.27)	7.40 (3.86)	6.70 (1.06)	8.50 (2.51)	6.90 (2.08)	8.30 (2.11)	5.60 (3.21)	7.40 (2.99)	7.10 (2.77)	7.32 (2.72)
Child Passively Engaged in Other Activity	.70 (1.16)	1.40 (1.17)	1.40 (1.17)	1.10 (1.10)	1.20 (1.03)	1.00 (1.05)	.80 (.63)	1.70 (1.83)	.90 (1.29)	1.30 (1.42)	.40 (.52)	1.30 (1.34)	1.06 (1.16)
# Statements	5.20 (2.20)	4.60 (1.43)	4.60 (1.43)	4.20 (2.44)	5.30 (3.40)	3.06 (3.31)	5.20 (2.35)	4.20 (1.40)	4.80 (2.49)	3.40 (2.46)	4.20 (1.40)	5.00 (1.70)	4.53 (2.26)
# Questions	9.20 (1.87)	6.20 (2.86)	8.20 (2.86)	8.80 (3.33)	8.00 (2.91)	9.90 (3.21)	8.60 (2.84)	10.10 (1.79)	9.30 (1.95)	10.20 (2.90)	8.20 (2.66)	9.10 (2.08)	9.05 (2.74)
# Low Level Mental Operational Demands	7.60 (4.33)	5.60 (3.03)	6.30 (2.50)	5.20 (2.44)	5.70 (1.16)	5.00 (2.00)	5.60 (2.76)	5.70 (3.02)	6.40 (3.37)	6.60 (2.63)	4.20 (1.69)	5.10 (2.33)	5.75 (2.73)
# Intermediate Level Mental Operational Demands	1.80 (1.40)	2.20 (1.03)	2.10 (1.45)	1.80 (1.40)	2.00 (1.49)	2.40 (1.90)	2.60 (2.68)	1.10 (.99)	1.60 (1.71)	1.00 (.67)	2.00 (1.56)	2.60 (1.27)	1.93 (1.55)
# High Level Mental Operational Demands	4.00 (2.71)	4.60 (2.55)	4.40 (2.76)	4.90 (2.60)	4.80 (2.53)	5.20 (2.97)	4.60 (1.90)	6.40 (3.31)	4.50 (2.95)	4.70 (2.41)	4.90 (1.79)	5.30 (2.16)	4.86 (2.53)

Table 17 (Continued)

Story Task--Fathers

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Fathers on Story Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Time of Interaction	349.00 (80.67)	373.70 (167.57)	262.30 (89.41)	342.70 (129.50)	352.60 (136.05)	402.20 (235.84)	337.50 (98.03)	424.30 (183.12)	330.10 (117.63)	247.70 (50.68)	447.10 (217.17)	332.00 (118.73)	350.10 (149.34)
# Interaction Units	91.70 (36.95)	111.70 (68.50)	69.10 (28.67)	89.60 (38.63)	103.00 (59.55)	108.00 (61.53)	87.30 (34.21)	121.10 (45.51)	95.90 (35.46)	68.90 (19.16)	119.00 (42.51)	86.80 (31.46)	96.01 (44.86)
No Mental Operational Demand	2.50 (1.27)	1.80 (1.81)	2.10 (1.45)	1.60 (1.27)	3.20 (2.20)	1.40 (1.58)	3.10 (2.28)	2.50 (2.17)	2.40 (1.78)	1.80 (.92)	2.60 (1.71)	2.20 (1.55)	2.27 (1.72)
Low Level Statements	1.40 (1.43)	3.30 (.68)	2.30 (1.64)	2.60 (1.71)	1.50 (.97)	3.40 (2.22)	1.50 (1.08)	2.20 (2.25)	2.20 (1.87)	3.10 (1.20)	1.40 (1.08)	1.50 (.97)	2.20 (1.61)
Low Level Questions	4.80 (2.82)	6.30 (2.75)	4.20 (1.48)	4.60 (2.41)	3.50 (2.37)	5.00 (2.00)	3.80 (2.57)	3.90 (1.79)	3.60 (2.72)	2.90 (1.91)	3.80 (2.94)	4.00 (1.41)	4.20 (2.37)
Intermediate Level Statements	.50 (.97)	1.00 (1.16)	1.10 (1.10)	1.20 (1.32)	.60 (.70)	.80 (.92)	.60 (.52)	.40 (.70)	.80 (.63)	.80 (1.14)	.60 (.70)	.40 (.97)	.73 (.92)
Intermediate Level Questions	.90 (.99)	.90 (1.29)	2.10 (1.97)	1.20 (1.03)	.80 (1.03)	1.30 (1.06)	1.10 (.88)	1.40 (1.17)	1.60 (1.08)	.70 (1.06)	1.50 (1.90)	1.50 (1.08)	1.25 (1.26)
High Level Statements	.90 (1.20)	.90 (1.29)	.50 (.53)	.90 (.57)	.70 (.68)	.60 (.84)	1.20 (.92)	1.40 (1.17)	1.40 (.97)	.70 (1.16)	1.60 (1.51)	1.60 (1.27)	1.03 (1.07)
High Level Questions	4.50 (2.88)	2.70 (1.64)	3.00 (1.89)	2.50 (1.78)	5.30 (2.50)	4.00 (2.06)	4.70 (3.68)	3.90 (2.28)	3.70 (1.34)	4.20 (1.48)	4.90 (2.73)	4.80 (2.86)	4.02 (2.40)
Structuring Task	1.00 (1.16)	.80 (1.03)	.50 (.71)	.80 (.79)	.80 (.63)	.50 (.53)	.80 (.79)	.90 (.99)	1.40 (.84)	.90 (1.10)	.90 (.99)	.50 (.71)	.82 (.87)
Child Management	.30 (.68)	.10 (.32)	.30 (.95)	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.00 (.00)	.30 (.68)	.30 (.68)	.30 (.68)	.10 (.32)	.15 (.50)
Reading	3.20 (1.55)	2.20 (1.93)	3.90 (1.91)	4.60 (1.65)	3.60 (2.63)	3.00 (1.56)	3.10 (2.18)	3.40 (2.41)	2.60 (1.65)	4.60 (1.71)	2.40 (1.71)	3.40 (1.58)	3.33 (1.96)
Verbal Approvals	1.70 (2.16)	2.40 (2.32)	1.80 (1.40)	1.80 (2.10)	2.80 (2.57)	1.20 (.92)	2.40 (2.41)	2.40 (2.59)	2.30 (1.70)	2.20 (1.23)	2.10 (1.79)	2.30 (1.25)	2.12 (1.90)
Verbal Disapprovals	.20 (.42)	.10 (.32)	.10 (.32)	.20 (.42)	.10 (.32)	.20 (.42)	.30 (.48)	.20 (.42)	.00 (.00)	.10 (.32)	.30 (.48)	.00 (.00)	.15 (.36)
Feedback to Child	1.10 (.88)	.40 (.70)	.60 (.84)	.80 (.79)	1.10 (1.45)	.60 (1.08)	.70 (.82)	.50 (.85)	.50 (.71)	.40 (.52)	.80 (.63)	.80 (.79)	.69 (.86)

Table 17 (Continued)

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Fathers on Story Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Positive Non-verbal Supports	.10 (.32)	.20 (.42)	.10 (.32)	.00 (.00)	.10 (.32)	.00 (.00)	.30 (.68)	.10 (.32)	.20 (.42)	1.80 (3.35)	.00 (.00)	.10 (.32)	.25 (1.58)
Negative Non-verbal Supports	.10 (.32)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.42)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.02 (.13)
Attention Getting	3.30 (1.77)	2.70 (2.58)	3.80 (1.99)	3.00 (1.83)	2.80 (1.75)	4.50 (1.90)	2.80 (1.32)	3.40 (1.84)	3.10 (1.97)	2.70 (1.70)	2.70 (1.89)	3.10 (1.66)	3.16 (1.86)
Diverting	.60 (.70)	.20 (.42)	.10 (.32)	.00 (.00)	.10 (.32)	.10 (.32)	.00 (.00)	.10 (.32)	.20 (.42)	.00 (.00)	.20 (.42)	.20 (.63)	.15 (.40)
Out of Contact	.20 (.42)	.10 (.32)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.20 (.42)	.00 (.00)	.00 (.00)	.10 (.32)	.10 (.32)	.50 (.71)	.10 (.33)
No Time for Child Response	.20 (.42)	.40 (.70)	.90 (.99)	.90 (.88)	1.50 (.97)	.70 (.68)	.70 (1.25)	1.30 (.95)	.80 (.79)	.80 (1.03)	1.20 (1.62)	1.20 (1.32)	.88 (1.03)
Child Actively Engaged with Parent	10.80 (2.90)	9.40 (2.12)	9.20 (3.33)	8.80 (3.12)	11.00 (2.91)	1.70 (3.74)	11.20 (3.02)	9.40 (2.84)	8.80 (2.90)	10.00 (3.27)	.60 (2.72)	11.00 (1.83)	10.00 (2.93)
Child Actively Engaged in Other Activity	.40 (.52)	.70 (.95)	.60 (.97)	1.10 (1.52)	.30 (.68)	.30 (.95)	.70 (1.06)	.50 (.85)	.60 (.97)	.60 (.97)	.80 (1.32)	.40 (.52)	.58 (.96)
Child Passively Engaged with Parent	7.10 (2.73)	8.20 (2.30)	7.90 (2.51)	9.00 (3.16)	6.20 (2.66)	7.30 (2.58)	6.50 (3.84)	7.60 (2.68)	8.80 (3.36)	7.70 (2.50)	6.20 (3.33)	6.90 (1.45)	7.45 (2.83)
Child Passively Engaged in Other Activity	1.50 (1.51)	1.30 (1.57)	1.40 (1.35)	.20 (.42)	1.00 (.94)	1.00 (1.16)	.90 (1.29)	1.20 (1.55)	1.00 (1.05)	.90 (1.20)	1.50 (1.23)	.50 (.97)	1.01 (1.22)
# Statements	3.80 (3.12)	6.00 (1.63)	4.40 (2.88)	5.50 (2.22)	3.60 (2.07)	5.30 (1.95)	4.10 (1.10)	4.90 (2.64)	5.80 (2.53)	5.50 (1.78)	4.50 (2.76)	4.00 (1.94)	4.78 (2.32)
# Questions	10.20 (3.01)	9.90 (2.47)	9.30 (3.34)	8.30 (2.50)	9.60 (3.69)	10.30 (1.95)	9.60 (3.47)	9.20 (2.15)	8.90 (3.54)	7.80 (2.30)	10.20 (2.44)	10.30 (1.89)	9.47 (2.78)
# Low Level Mental Operational Demands	6.20 (2.49)	9.60 (2.46)	6.50 (1.84)	7.20 (2.20)	5.00 (2.31)	8.40 (2.68)	5.30 (2.63)	6.10 (3.57)	5.80 (2.57)	6.00 (2.06)	5.20 (2.25)	5.50 (1.90)	6.40 (2.69)
# Intermediate Level Mental Operational Demands	1.40 (1.17)	1.90 (1.45)	3.20 (2.20)	2.40 (1.43)	1.40 (1.35)	2.10 (1.10)	1.70 (1.25)	1.80 (1.40)	2.40 (1.27)	1.50 (1.35)	2.10 (1.97)	1.90 (1.60)	1.98 (1.51)
# High Level Mental Operational Demands	5.40 (3.34)	3.60 (2.32)	3.50 (2.01)	3.40 (1.96)	6.00 (2.36	4.60 (2.50)	5.90 (3.84)	5.30 (2.75)	5.10 (1.45)	4.90 (1.79)	6.50 (3.34)	6.40 (2.72)	5.05 (2.71)

Table 17 (Continued)

Paper Task--Mothers

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Mothers on Paper Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Time of Interaction	196.30 (70.55)	285.60 (160.91)	320.70 (134.21)	337.60 (121.14)	290.90 (142.66)	226.30 (55.01)	226.60 (171.84)	236.20 (112.24)	238.80 (93.45)	203.20 (90.70)	234.90 (92.65)	265.20 (86.12)	255.19 (118.84)
# Interaction Units	68.20 (22.95)	98.40 (35.92)	101.40 (33.21)	106.90 (41.20)	106.30 (49.24)	76.30 (29.23)	78.60 (50.68)	77.50 (26.34)	81.70 (25.77)	70.20 (28.06)	77.20 (30.15)	98.60 (30.08)	86.78 (35.81)
Child's Performance Rating	18.60 (3.72)	16.20 (5.71)	16.70 (3.20)	20.30 (3.23)	16.30 (5.03)	15.10 (5.59)	19.50 (3.21)	16.30 (3.95)	17.40 (4.84)	18.10 (3.67)	17.90 (4.53)	16.20 (3.62)	17.38 (4.34)
No Mental Operational Demand	2.60 (1.43)	1.90 (1.66)	3.60 (1.65)	1.80 (1.62)	2.30 (1.77)	1.40 (.52)	3.00 (1.70)	2.40 (2.01)	2.80 (1.81)	2.40 (1.71)	2.00 (1.56)	3.00 (1.33)	2.43 (1.64)
Low Level Statements	.80 (.79)	.50 (.53)	.40 (.70)	.80 (1.23)	1.30 (1.57)	.30 (.48)	.20 (.42)	.50 (.71)	.40 (.52)	.10 (.32)	.40 (.70)	.90 (.99)	.55 (.85)
Low Level Questions	2.70 (1.77)	3.70 (1.42)	3.90 (2.13)	3.50 (2.59)	3.10 (1.37)	2.80 (1.69)	3.80 (2.35)	2.60 (2.41)	3.70 (1.83)	2.80 (1.55)	3.20 (1.81)	3.30 (1.49)	3.26 (1.87)
Intermediate Level Statements	.60 (.97)	.70 (.68)	.40 (.52)	1.60 (1.35)	.80 (.92)	.60 (.70)	.80 (.92)	.60 (.70)	.80 (1.32)	.40 (.70)	.60 (.70)	.60 (.84)	.71 (.90)
Intermediate Level Questions	.50 (.71)	1.00 (1.56)	1.70 (1.70)	1.60 (1.43)	1.10 (1.73)	1.40 (1.43)	1.90 (1.52)	.80 (.63)	1.30 (1.25)	1.60 (1.71)	.80 (1.23)	1.30 (1.34)	1.25 (1.36)
High Level Statements	.80 (1.03)	.80 (1.03)	.80 (.79)	.70 (.95)	.80 (.92)	.70 (.82)	.50 (.71)	.20 (.42)	.70 (.82)	.60 (1.27)	.40 (.52)	.60 (.52)	.63 (.83)
High Level Questions	2.20 (1.55)	3.60 (1.96)	2.70 (.95)	4.10 (2.08)	2.80 (1.62)	3.90 (2.28)	3.20 (1.75)	3.20 (2.20)	2.30 (1.16)	2.80 (2.30)	4.30 (2.95)	3.60 (2.55)	3.23 (2.04)
Structuring Task	9.70 (3.06)	7.20 (3.01)	6.00 (3.27)	5.80 (2.49)	7.60 (2.59)	8.70 (2.98)	6.50 (2.59)	9.50 (3.95)	7.90 (3.07)	9.30 (2.79)	8.00 (3.16)	6.50 (2.16)	7.73 (3.13)
Child Management	.10 (.32)	.60 (.84)	.50 (.53)	.10 (.32)	.20 (.63)	.20 (.42)	.10 (.32)	.20 (.63)	.10 (.32)	.00 (.00)	.30 (.68)	.20 (.42)	.22 (.51)
Verbal Approvals	2.70 (1.34)	2.70 (1.89)	3.10 (1.79)	3.60 (2.22)	3.40 (2.41)	2.10 (1.45)	2.70 (1.16)	3.50 (2.32)	3.40 (2.37)	3.70 (1.34)	3.70 (1.95)	4.10 (2.08)	3.23 (1.90)
Verbal Disapprovals	.90 (1.20)	.20 (.42)	.50 (.97)	.30 (.48)	1.00 (1.56)	.40 (.70)	.70 (.68)	.50 (.53)	.50 (.85)	1.10 (1.20)	.70 (.68)	.50 (.85)	.61 (.90)
Correction of Child	.50 (.53)	.00 (.00)	.40 (.70)	.20 (.63)	.40 (.70)	.20 (.63)	.30 (.48)	.00 (.00)	.30 (.48)	.10 (.32)	.00 (.00)	.10 (.32)	.21 (.48)
Feedback to Child	1.10 (1.37)	.90 (1.29)	1.00 (1.25)	.60 (1.35)	1.00 (1.16)	.60 (.70)	1.20 (1.75)	1.10 (1.29)	1.00 (1.05)	1.20 (1.14)	.60 (.97)	1.00 (.94)	.94 (1.18)

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Mothers on Paper Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Positive Non-verbal Supports	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.00 (.00)	.50 (.85)	.00 (.00)	.06 (.30)
Negative Non-verbal Supports	.00 (.00)	.00 (.00)	.10 (.32)	.00 (.00)	.10 (.32)	.50 (1.08)	.00 (.00)	.10 (.32)	.20 (.42)	.00 (.00)	.10 (.32)	.10 (.32)	.10 (.40)
Helping Intrusions	4.10 (4.18)	2.10 (1.52)	2.40 (1.84)	1.30 (1.83)	4.50 (4.53)	5.10 (3.78)	3.20 (1.81)	4.40 (2.72)	5.90 (4.31)	4.30 (3.74)	3.70 (2.45)	3.50 (2.88)	3.71 (3.24)
Takeover Intrusions	1.00 (.67)	1.00 (1.25)	2.50 (2.37)	1.00 (2.00)	1.80 (2.04)	2.00 (1.63)	1.20 (1.14)	.80 (.79)	1.30 (2.41)	.50 (.71)	2.90 (2.56)	2.10 (1.85)	1.51 (1.81)
Attention Getting	4.30 (2.36)	4.90 (1.85)	4.50 (2.01)	3.70 (2.45)	5.20 (2.70)	4.10 (1.97)	4.10 (1.73)	4.50 (2.37)	3.90 (2.42)	5.70 (3.34)	4.10 (2.18)	5.30 (2.87)	4.53 (2.36)
Diverting	.10 (.32)	.10 (.32)	.20 (.42)	.20 (.42)	.40 (.97)	.00 (.00)	.10 (.32)	.10 (.32)	.10 (.32)	.00 (.00)	.00 (.00)	.10 (.32)	.12 (.39)
Out of Contact	.30 (.68)	.10 (.32)	.50 (.71)	.20 (.42)	.00 (.00)	.10 (.32)	.10 (.32)	.20 (.63)	.30 (.68)	.20 (.42)	.10 (.32)	.40 (.97)	.21 (.53)
No Time for Child Response	1.30 (1.06)	1.10 (1.29)	1.00 (1.56)	.60 (.52)	.80 (1.03)	1.10 (1.45)	.90 (.88)	1.20 (.79)	1.50 (1.58)	.50 (1.27)	1.20 (1.03)	1.70 (1.70)	1.08 (1.18)
Child Actively Engaged with Parent	13.20 (2.04)	11.90 (2.38)	14.10 (1.91)	14.10 (3.25)	12.40 (2.55)	13.40 (3.17)	14.10 (1.52)	13.20 (2.16)	14.00 (2.26)	14.30 (2.91)	14.30 (2.71)	12.50 (1.43)	13.46 (2.52)
Child Actively Engaged in Other Activity	.50 (.71)	1.70 (3.34)	1.00 (.94)	.20 (.42)	.80 (1.62)	.30 (.48)	.30 (.68)	.60 (.70)	.10 (.32)	.50 (.97)	.10 (.32)	.90 (1.29)	.58 (1.29)
Child Passively Engaged with Parent	4.30 (2.21)	4.10 (1.66)	3.30 (1.49)	4.40 (2.99)	4.90 (2.23)	4.10 (2.38)	2.90 (1.45)	4.10 (3.04)	3.10 (2.23)	3.40 (2.07)	3.40 (1.84)	3.80 (2.15)	3.82 (2.57)
Child Passively Engaged in Other Activity	.70 (.95)	1.20 (1.03)	.60 (.84)	.70 (1.06)	1.10 (1.29)	1.10 (1.10)	1.80 (1.03)	1.00 (.82)	1.30 (.95)	1.30 (1.83)	1.00 (1.41)	1.00 (1.05)	1.07 (1.14)
# Statements	11.90 (2.60)	9.20 (2.82)	7.60 (3.50)	8.90 (2.33)	10.50 (2.22)	10.30 (2.21)	8.00 (2.06)	1.80 (3.91)	9.80 (1.93)	.40 (2.55)	9.40 (3.03)	8.60 (2.12)	9.62 (2.81)
# Questions	5.40 (2.50)	8.30 (2.16)	8.30 (2.37)	9.20 (2.82)	7.00 (2.94)	8.10 (1.85)	8.90 (2.64)	6.60 (3.03)	7.30 (2.11)	7.20 (2.90)	8.30 (3.02)	8.20 (2.25)	7.73 (2.69)
# Low Level Mental Operational Demands	3.50 (1.84)	4.20 (1.32)	4.30 (1.95)	4.30 (2.50)	4.40 (2.22)	3.10 (1.97)	4.00 (2.36)	3.10 (2.38)	4.10 (1.97)	2.90 (1.73)	3.60 (2.12)	4.20 (1.93)	3.81 (2.02)
# Intermediate Level Mental Operational Demands	1.10 (1.66)	1.70 (1.25)	2.10 (1.60)	3.20 (2.35)	1.90 (1.60)	2.00 (1.56)	2.70 (1.77)	1.40 (.84)	2.10 (1.85)	2.00 (2.06)	1.40 (1.17)	1.90 (1.66)	1.96 (1.67)
# High Level Mental Operational Demands	3.00 (1.76)	4.40 (2.01)	3.50 (.85)	4.80 (2.78)	3.60 (2.12)	4.60 (2.76)	3.70 (2.06)	3.40 (2.27)	3.00 (1.56)	3.40 (2.59)	4.70 (2.91)	4.20 (2.39)	3.86 (2.23)

Table 17 (Continued)

Paper Task—Fathers

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Fathers on Paper Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Time of Interaction	307.00 (227.03)	298.50 (188.03)	241.90 (69.75)	344.20 (225.24)	296.00 (91.64)	314.90 (157.48)	297.80 (105.77)	305.50 (153.78)	277.40 (80.46)	269.10 (199.06)	313.90 (144.61)	315.10 (141.75)	300.69 (152.55)
# Interaction Units	108.10 (68.32)	105.10 (57.22)	74.40 (20.58)	116.00 (72.84)	112.20 (39.05)	120.10 (51.93)	109.30 (45.43)	107.80 (66.95)	103.80 (33.70)	100.20 (82.43)	111.20 (43.29)	111.50 (48.70)	106.64 (53.77)
Child's Performance Rating	15.40 (6.29)	16.30 (5.64)	18.10 (2.64)	17.10 (2.85)	18.50 (2.99)	18.80 (3.43)	20.80 (3.49)	17.60 (6.80)	16.30 (4.81)	17.00 (4.00)	18.10 (2.38)	18.70 (5.64)	17.73 (4.50)
No Mental Operational Demand	2.30 (1.83)	1.90 (1.29)	2.00 (1.56)	2.40 (1.17)	2.50 (.97)	1.90 (1.20)	2.40 (2.17)	3.50 (1.27)	2.30 (2.16)	1.40 (1.17)	2.00 (1.83)	2.60 (1.71)	2.27 (1.58)
Low Level Statements	.60 (.70)	1.00 (1.05)	.30 (.48)	1.40 (1.27)	.30 (.48)	.40 (.70)	.70 (.82)	.90 (.74)	.40 (.70)	.60 (.97)	.40 (.70)	.30 (.48)	.61 (.82)
Low Level Questions	3.00 (1.16)	4.10 (2.47)	2.80 (1.62)	2.50 (1.27)	2.30 (1.77)	4.90 (2.42)	3.10 (1.79)	3.50 (1.78)	2.90 (1.85)	2.50 (1.84)	3.10 (1.66)	4.00 (2.79)	3.23 (1.98)
Intermediate Level Statements	.10 (.32)	.60 (.84)	.90 (.74)	.50 (.71)	.70 (1.06)	.40 (.70)	.40 (.52)	.80 (.63)	.40 (.70)	.60 (.52)	.50 (.71)	.70 (.68)	.55 (.70)
Intermediate Level Questions	1.10 (.88)	.80 (1.03)	1.90 (2.69)	1.20 (1.40)	2.00 (1.63)	2.40 (1.90)	1.30 (.95)	.70 (.82)	1.70 (1.57)	1.60 (1.58)	1.30 (1.25)	.90 (.99)	1.41 (1.50)
High Level Statements	.90 (1.10)	.30 (.48)	.50 (.97)	.50 (.71)	.20 (.42)	.50 (.53)	.20 (.42)	.50 (.71)	.70 (1.06)	.50 (.88)	.60 (.70)	.80 (1.03)	.52 (.78)
High Level Questions	3.80 (1.62)	3.10 (2.03)	3.30 (1.49)	4.00 (2.26)	3.00 (1.76)	3.10 (1.60)	4.90 (2.96)	3.20 (1.93)	3.40 (1.51)	4.50 (2.27)	3.60 (2.01)	4.40 (2.22)	3.69 (2.01)
Structuring Task	7.90 (1.85)	7.20 (2.57)	8.30 (3.34)	7.30 (2.21)	9.00 (2.26)	6.30 (2.71)	6.90 (2.56)	6.90 (3.90)	7.90 (2.92)	8.30 (2.71)	8.50 (2.64)	6.30 (2.67)	7.57 (2.75)
Child Management	.30 (.68)	1.00 (1.89)	.00 (.00)	.00 (.00)	.00 (.00)	.10 (.32)	.10 (.32)	.00 (.00)	.30 (.48)	.00 (.00)	.00 (.00)	.00 (.00)	.15 (.64)
Verbal Approvals	1.80 (1.23)	2.50 (2.37)	3.00 (2.16)	3.40 (1.90)	3.40 (1.43)	2.80 (2.10)	3.70 (2.00)	2.30 (1.16)	3.60 (2.32)	2.20 (.92)	3.40 (1.71)	2.80 (1.55)	2.91 (1.81)
Verbal Disapprovals	1.00 (.94)	.80 (.79)	.70 (1.06)	.90 (.99)	.50 (.53)	1.30 (1.06)	1.20 (.79)	.80 (.63)	.80 (.79)	.80 (.79)	.60 (.84)	1.20 (1.55)	.88 (.92)
Correction of Child	.10 (.32)	.30 (.48)	.00 (.00)	.10 (.32)	.10 (.32)	.00 (.00)	.10 (.32)	.60 (.70)	.00 (.00)	.00 (.00)	.10 (.32)	.20 (.42)	.13 (.37)
Feedback to Child	1.50 (1.27)	.70 (.82)	.40 (.52)	.50 (.53)	.70 (.95)	.50 (.71)	.80 (1.23)	1.40 (.97)	.90 (1.60)	1.00 (1.05)	.80 (1.32)	.60 (1.08)	.82 (1.05)

Table 17 (Continued)

Variable	One-Child Family				Three-Child Family with Near Spacing				Three-Child Family with Far Spacing				Total for Fathers on Paper Task
	Working Class		Middle Class		Working Class		Middle Class		Working Class		Middle Class		
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
Positive Non-verbal Supports	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.20 (.42)	.10 (.32)	.10 (.32)	.00 (.00)	.00 (.00)	.10 (.32)	.10 (.32)	.00 (.00)	.06 (1.24)
Negative Non-verbal Supports	.30 (.68)	.00 (.00)	.00 (.00)	.00 (.00)	.30 (.68)	.00 (.00)	.20 (.42)	.00 (.00)	.60 (.84)	.00 (.00)	.00 (.00)	.00 (.00)	.12 (.41)
Helping Intrusions	1.90 (1.97)	3.20 (2.78)	3.30 (3.43)	3.40 (2.32)	3.50 (2.55)	2.50 (2.32)	3.20 (2.30)	2.00 (2.94)	3.10 (2.51)	3.90 (2.60)	1.40 (1.27)	4.10 (2.51)	2.96 (2.52)
Takeover Intrusions	2.50 (4.17)	1.50 (3.72)	1.80 (1.32)	1.60 (1.35)	1.80 (2.15)	1.00 (1.05)	.30 (.95)	.80 (.92)	3.00 (4.85)	1.10 (1.85)	1.50 (1.51)	2.20 (3.16)	1.59 (2.59)
Attention Getting	4.40 (2.12)	5.30 (1.64)	4.40 (2.59)	4.30 (2.41)	4.00 (2.00)	5.30 (3.56)	4.30 (1.49)	4.60 (2.22)	5.70 (3.37)	4.90 (2.27)	4.20 (2.35)	4.70 (1.89)	4.68 (2.38)
Diverting	.10 (.32)	.40 (.84)	.00 (.00)	.10 (.32)	.20 (.42)	.40 (.70)	.00 (.00)	.40 (.52)	.50 (1.27)	.00 (.00)	.30 (.68)	.10 (.32)	.21 (.58)
Out of Contact	.40 (.70)	.10 (.32)	.30 (.68)	.20 (.42)	.00 (.00)	.10 (.32)	.20 (.42)	.10 (.32)	.20 (.42)	.00 (.00)	.10 (.32)	.10 (.32)	.15 (.40)
No Time for Child Response	1.30 (1.06)	1.30 (1.57)	1.20 (1.40)	1.30 (1.16)	1.50 (1.27)	1.30 (1.34)	1.40 (1.58)	.90 (1.85)	1.50 (1.08)	1.40 (.97)	1.50 (1.18)	1.60 (1.43)	1.35 (1.29)
Child Actively Engaged with Parent	13.90 (2.64)	13.10 (3.00)	14.00 (2.91)	12.80 (2.66)	13.20 (1.93)	14.30 (2.91)	13.50 (4.22)	12.40 (2.46)	12.30 (2.54)	14.80 (3.43)	13.60 (1.51)	12.60 (3.13)	13.38 (2.82)
Child Actively Engaged in Other Activity	.70 (1.06)	1.00 (1.05)	.20 (.42)	.80 (1.03)	.40 (.70)	.30 (.48)	.60 (.84)	.60 (1.08)	.60 (.97)	.40 (.97)	.40 (.70)	.50 (.71)	.54 (.85)
Child Passively Engaged with Parent	3.20 (1.69)	3.60 (2.22)	3.90 (1.91)	4.30 (2.58)	4.10 (2.03)	3.40 (2.37)	3.10 (3.04)	5.20 (1.32)	4.80 (2.25)	2.10 (2.08)	3.60 (1.96)	3.90 (2.08)	3.77 (2.21)
Child Passively Engaged in Other Activity	.90 (1.52)	1.00 (1.05)	.70 (.95)	.80 (1.14)	.80 (1.03)	.70 (.82)	1.40 (1.90)	.90 (1.10)	.80 (.92)	1.30 (1.25)	.90 (.99)	1.30 (.95)	.96 (1.14)
# Statements	9.50 (2.17)	9.10 (3.28)	10.00 (3.43)	9.70 (2.00)	10.20 (2.10)	7.60 (2.91)	8.20 (2.44)	9.10 (3.60)	9.40 (2.59)	10.00 (1.94)	10.00 (3.40)	8.10 (2.77)	9.24 (2.77)
# Questions	7.90 (2.13)	8.00 (3.16)	8.00 (3.77)	7.70 (1.95)	7.30 (1.77)	10.40 (2.80)	9.30 (2.41)	7.40 (3.06)	8.00 (2.26)	8.60 (2.01)	8.00 (3.23)	9.30 (2.58)	8.33 (2.68)
# Low Level Mental Operational Demands	3.60 (1.27)	5.10 (2.47)	3.10 (1.60)	3.90 (2.18)	2.60 (1.78)	5.30 (2.36)	3.80 (2.10)	4.40 (2.12)	3.30 (1.95)	3.10 (2.03)	3.50 (1.58)	4.30 (2.75)	3.83 (2.11)
# Intermediate Level Mental Operational Demands	1.20 (1.03)	1.40 (1.78)	2.80 (2.39)	1.70 (1.57)	2.70 (2.00)	2.80 (2.35)	1.70 (1.25)	1.50 (1.08)	2.10 (1.85)	2.20 (1.75)	1.80 (1.55)	1.60 (1.43)	1.96 (1.73)
# High Level Mental Operational Demands	4.70 (2.16)	3.40 (2.07)	3.80 (1.93)	4.50 (2.07)	3.20 (2.04)	3.60 (1.84)	5.10 (2.85)	3.70 (2.41)	4.10 (1.91)	5.00 (2.31)	4.20 (1.81)	5.20 (2.86)	4.21 (2.21)

Table 18

Behavior Variables Significantly Correlated across Tasks

Parent Behaviors

Fathers' Behaviors	r	Mothers' Behaviors	r
Length of interactions	.26	Length of interactions	.40
Number of interaction units	.29	Number of interaction units	.38
No mental operational demands	.25	No mental operational demands	.18
Intermediate level questions	.28	-	
High level statements	.16	-	
Number of questions	.18	-	
Number of intermediate level mental operational demands	.30	-	
Feedback	.35	Feedback	.22
Correction	.18	Correction	.15
Attention getting	.17	Attention getting	.28
-		Structuring	.21
-		Approval	.15
-		Negative physical affect	.23
-		Takeover intrusions	.18
No time for child response	.19	No time for child response	.17

(with father) Child Behaviors (with mother)

Actively engaged in interaction	.21	Actively engaged in interaction	.19
Passively engaged in interaction	.20	Passively engaged in interaction	.22
Passively not engaged in interaction	.15	-	

Approximately equal numbers of behavior variables correlated across tasks for fathers and for mothers. However, the types of behaviors that were correlated across the two tasks were different for fathers than for mothers. Fathers were relatively more consistent than mothers in their use of distancing strategies across tasks (intermediate level questions, high level statements, number of questions, intermediate level mental operational demands). Significant correlations between mothers' behaviors on the two tasks tended to occur for emotional support system variables (approvals, negative physical affect, takeover intrusions, structuring). Thus, when parents did evidence consistency in teaching style across tasks, the nature of that consistency appeared to be dependent on the sex of the parent. Consistent maternal styles involved emotional tone, in both verbal and nonverbal modes, while for fathers consistency lay in the form and content through which information is conveyed to the child (form of utterance and mental demand).

To summarize thus far, parents' behaviors appear to be influenced by a variety of factors. The task in which the parent and the child are engaged is an important determinant of the types of behaviors parents are likely to exhibit. This may in fact be a positive attribute of parental teaching styles, and consistency in parental practice may not be as advantageous to child outcomes as flexibility and the ability to adopt alternative strategies. That is, parents may modify their strategy in accordance with the particular demands of the tasks and may do so appropriately. Perhaps inquiry is a good way to stimulate a child to think about a story, but demonstration is the best way to get a child to make a paper boat. In the following section, the relationships between parental behaviors during each of the teaching situations and children's performance on representational thinking tasks will be reported.

Relationships between Parental Behaviors and Children's Representational Competenc

Results reported in prior sections indicate that both parental teaching behaviors and children's representational ability scores varied with demographic characteristics such as SES and family constellation. These findings are consistent with those of previous studies which report that middle-class mothers evidence higher levels of questioning in problem-solving tasks with their children (cf. Bee, Van Egeren, Streissguth, Nyman, & Leckie, 1969) and that middle-class children evidence higher levels of representational competence than children from lower SES backgrounds (cf. Sigel & Olmsted, 1971). In addition, parental behaviors appear to vary with task and sex of parent. To determine the degree to which relationships between distancing and child outcomes may be due to demographic characteristics, such as family constellation and SES, a set of regression analyses was undertaken. Regressions were conducted separately for behaviors of mothers and fathers and for the paper and the story task. These regression analyses were similar to those used to establish relationships between parental beliefs and parental behaviors (see p. 94). In this way, the relationship between parental distancing strategies and children's representational competence could be determined, controlling for the confounding effects of SES and family constellation.

Results of regression analyses of mothers' behaviors on the story and paper tasks and child outcomes are presented in Table 19. Note that SES, family constellation and interaction terms were stepped in to the analysis before mothers' behavior scores in order to determine if a significant relationship with child variables existed beyond the confounding effects of demographic variables. A number of significant relationships were obtained between the control variables and child scores. Specifically, six significant multiple correlation coefficients were obtained for SES and child outcomes,

Table 19

Multiple Correlation Coefficients for Mother's Storytelling and Paper-Folding Behaviors and Selected Child Assessment Variables

Mothers' Behaviors on Storytelling Task				Mothers' Behaviors on Paper-Folding Task	
		Time to Reconstruct Array (SRI)			
		Social class	.20*		
		Family constellation	.34*		
		Interaction terms	.36		
--				Takeover intrusions	.49
				# Interaction units	.54
				High level questions	(-).58
		Recognition (SRI)			
		Social class	.13		
		Family constellation	.20		
		Interaction terms	.30*		
Helping intrusions	.37			Diverting	.35
# High level mental operational demands	.41				
		Correct Sequence Pairs Reconstructed (SRI)			
		Social class	.15		
		Family constellation	.21		
		Interaction terms	.24		
--				Attention getting	(-).37
				Child passively engaged in other activity	.43
		Correct Items Reconstructed (SRI)			
		Social class	.01		
		Family constellation	.13		
		Interaction terms	.13		
--				Attention getting	(-).27

Table 19 (Continued)

Mothers' Behaviors on Storytelling Task				Mothers' Behaviors on Paper-Folding Task	
		Prediction of Transformation (Conservation)			
		Social class	.11		
		Family constellation	.21		
		Interaction tersm	.31*		
--				No time for child response	.39
				# Statements	.45
				Verbal disapprovals	.49
		Anticipation of Rotation (KAI)			
		Social class	.08		
		Family constellation	.10		
		Interaction terms	.22		
Child passively engaged in other activity	(-).31				
		Maintenance of Anchor Point (KAI)			
		Social class	.19*		
		Family constellation	.24		
		Interaction terms	.28		
--				Low level mental operational demand	.38
		Logical Classification Groupings			
		Social class	.18*		
		Family constellation	.22		
		Interaction terms	.22		
# High level mental operational demands	.33			--	
		Groupings Based on Descriptive Characteristics			
		Social class	.19*		
		Family constellation	.27		
		Interaction terms	.30		
# High level mental operational demands	.35			No time for child response	.35

Table 19 (Continued)

Mothers' Behaviors on Storytelling Task				Mothers' Behaviors on Paper-Folding Task	
		Groupings Based on Logical Classes			
		Social class	.01		
		Family constellation	.11		
		Interaction terms	.17		
Low level statements	.25			Diverting	.40
# Questions	.32				
		Withdrawal Interpersonal Strategies			
		Social class	.06		
		Family constellation	.24*		
		Interaction terms	.28		
Child passively engaged in other activity	.35			Helping intrusions	(-).36
Verbal approvals	.40				
		Logical Rationale for Rules and Conventions			
		Social class	.33*		
		Family constellation	.34		
		Interaction terms	.39		
Child actively engaged in other activity	(-).44			--	
		Knowledge of Rules and Conventions			
		Social class	.29*		
		Family constellation	.29		
		Interaction terms	.31		
Child actively engaged in other activity	(-).42			Attention getting	(-).39
# Low level mental operational demands	(-).45				
		Low Level Definition of Friendship			
		Social class	.05		
		Family constellation	.18		
		Interaction terms	.18		
Correction	.29			Verbal disapprovals	.33
Verbal disapprovals	.35				

Table 19 (Continued)

Mothers' Behaviors on Storytelling Task				Mothers' Behaviors on Paper-Folding Task	
		High Level Definition of Friendship			
		Social class	.16		
		Family constellation	.17		
		Interaction terms	.21		
# Low level mental operational demands	(-).32			Child's performance rating	.28

Note. All R's for relationship between parent behaviors and child outcomes are significant at $p < .05$.

*Indicates p of .05 or less for demographic variables.

(-) Indicates direction of zero-order correlation.

two for family constellation and two for interaction terms. However, parents' behavior scores were related to children's representational scores above and beyond these control variables in many instances.

With regard to distancing variables measured during the story task, relationships in the predicted direction were obtained for children's recognition scores, logical classification groupings, groupings based on descriptive characteristics, groupings based on logical classes, knowledge of rules and conventions and high level definitions of friendship. For distancing variables assessed during mothers' interactions with their child during the paper task, relationships with child outcomes were in the predicted direction for time children took to reconstruct an array from memory. Contrary to predictions, mothers' use of statements during the paper task was positively related to children's correct conservation predictions and low level mental operational demands were related to children's ability to maintain anchor points during the rotation task.

Four significant relationships between mothers' use of emotional support behaviors or efforts to maintain the cohesion of the interaction during the story task and children's representational competence were obtained. Helping intrusions were related to children's recognition scores, verbal approvals to children's use of withdrawal interpersonal strategies, and both corrections and verbal disapprovals by mothers predicted to children's use of low level definitions of friendship. For the paper task, nine of the mothers' emotional support and cohesion behaviors produced significant increments in multiple correlation coefficients. Takeover intrusions were related to children's time in reconstructing an array from memory, attention getting was related to number of items and to number of sequence pairs remembered and to children's knowledge of rules and conventions. Mothers' diverting behaviors were related to children's recognition scores and groupings based on logical classes. Helping intrusions were predictors of children's use of withdrawal interpersonal strategies. Mothers' verbal disapprovals were related to low level definitions of friendship by children and to children's conservation predictions.

Results of the regression analyses conducted on fathers' behaviors and children's assessment scores are presented in Table 20. Six significant multiple correlation coefficients were obtained for SES and child outcomes, two for family constellation and two for interaction terms. In each case, however, fathers' behavior scores were related to child outcome variables above and beyond these demographic characteristics.

Fathers' scores on distancing variables for the story task were related to child outcomes for four of the child assessment variables. Relationships were in the expected direction for groupings based on descriptive characteristics, children's use of withdrawal interpersonal strategies and high level definitions of friendship. A positive relationship obtained between children's conservation predictions and no mental operational demands evidenced by fathers was contrary to predictions. For distancing behaviors evidenced by fathers during the paper task, six relationships with child outcomes were in the predicted direction (children's recognition scores, number of items and number of sequence pairs reconstructed correctly, knowledge of rules and conventions and both low and high level definitions of friendship). The positive relationship between no mental operational demands by fathers and children's logical classification groupings was contrary to predictions based on distancing theory.

Table 20

Multiple Correlation Coefficients for Fathers' Storytelling and Paper-Folding Behaviors and Selected Child Assessment Variables

Fathers' Behaviors on Storytelling Task				Fathers' Behaviors on Paper-Folding Task	
		Time to Reconstruct Array (SRI)			
		Social class	.20*		
		Family constellation	.34*		
		Interaction terms	.36		
Attention getting	(-).40			Takeover intrusions	.54
		Recognition (SRI)			
		Social class	.13		
		Family constellation	.20		
		Interaction terms	.30*		
				Child actively engaged in other activity	.36
				Intermediate level statements	(-).40
				Verbal disapprovals	(-).45
		Correct Sequence Pairs Reconstructed (SRI)			
		Social class	.15		
		Family constellation	.21		
		Interaction terms	.24		
Out of contact	.35			# High level mental operational demands	.39
		Correct Items Reconstructed (SRI)			
		Social class	.01		
		Family constellation	.13		
		Interaction terms	.13		
# Interaction units	(-).28			# High level mental operational demands	.35

Table 20 (Continued)

Fathers' Behaviors on Storytelling Task				Fathers' Behaviors on Paper-Folding Task	
Prediction of Transformation (Conservation)					
		Social class	.11		
		Family constellation	.21		
		Interaction terms	.31*		
No mental operational demands	.38			Child passively engaged with parent	(-).36
Child management	.43			Positive nonverbal supports	.40
Diverting	(-).46				
Anticipation of Rotation (KAI)					
		Social class	.08		
		Family constellation	.10		
		Interaction terms	.22		
Child passively engaged in other activity	(-).36			Takeover intrusions	(-).29
				Attention getting	.34
Maintenance of Anchor Point (KAI)					
		Social class	.21*		
		Family constellation	.24		
		Interaction terms	.28		
--				Length of interaction	(-).33
Logical Classification Groupings					
		Social class	.18*		
		Family constellation	.22		
		Interaction terms	.22		
--				--	
Groupings Based on Descriptive Characteristics					
		Social class	.19*		
		Family constellation	.27		
		Interaction terms	.30		
Intermediate level statements	(-).36			--	
Reading	.40				

Table 20 (Continued)

Fathers' Behaviors on Storytelling Task				Fathers' Behaviors on Paper-Folding Task	
		Groupings Based on Logical Classes			
		Social class	.01		
		Family constellation	.11		
		Interaction terms	.17		
--				No mental operational demand	.28
		Withdrawal Interpersonal Strategies			
		Social class	.06		
		Family constellation	.24*		
		Interaction terms	.28		
# Low level mental operational demands	(-).38			Verbal disapprovals	(-).34
No time for child response	.44				
Child actively engaged in other activity	(-).48				
Verbal approvals	(-).51				
Out of contact	(-).54				
		Logical Rationale for Rules and Conventions			
		Social class	.33*		
		Family constellation	.33		
		Interaction terms	.39		
--				Child's performance rating	.45
		Knowledge of Rules and Conventions			
		Social class	.24*		
		Family constellation	.29		
		Interaction terms	.31		
Correction	(-).36			High level statements	.36
				Negative nonverbal supports	(-).40
		Low Level Definitions of Friendship			
		Social class	.05		
		Family constellation	.18		
		Interaction terms	.18		
				Low level questions	.26

Table 20 (Continued)

Fathers' Behaviors on Storytelling Task		Fathers' Behaviors on Paper-Folding Task	
High Level Definitions of Friendship			
Social class	.16		
Family constellation	.17		
Interaction terms	.21		
# Low level mental operational demands	(-).29	No mental operational demands	(-).30
Positive nonverbal supports	.34		

Note. All R's for relationship between parent behaviors and child outcomes are significant at $p < .05$.

*Indicates p of .05 or less for demographic variables.

(-) Indicates direction of zero-order correlation.

With regard to emotional support and cohesion behaviors exhibited during the story task, significant increments in the multiple correlation coefficients were obtained for nine child assessment variables. Fathers' attention getting was related to children's time scores on the memory task. Behavior scores for being out of contact with the child related to number of correct sequence pairs reconstructed by the child and the child's use of withdrawal interpersonal strategies. Number of interaction units during the story predicted number of items correctly reconstructed by the child. Child management and diverting behaviors by the father were related to children's conservation predictions, verbal approvals to children's withdrawal interpersonal strategies and positive nonverbal supports to high level definitions of friendship. Significant increments in the multiple correlation coefficients due to emotional support or cohesion behaviors evidenced by fathers during the paper task occurred in eight instances. Takeover intrusions predicted children's time to reconstruct an array and anticipation of the outcome of rotation. Fathers' use of verbal disapprovals was related to children's recognition scores and use of withdrawal interpersonal strategies. Positive nonverbal supports were related to children's conservation predictions and negative nonverbal supports were related to children's knowledge of rules and conventions. Fathers' attention getting was a predictor for anticipation of rotation by children and length of interaction for anchor point maintenance on the KAI task.

To summarize thus far, both mothers' and fathers' behaviors were related to children's performance on problem-solving tasks requiring representational thinking even after family constellation and socioeconomic factors were stepped into the analysis. When distancing variables produced significant increments in multiple correlations, the results were nearly uniformly in the predicted direction regardless of the sex of the parent and the task in which the behaviors were observed.

One additional set of regression analyses was conducted in order to investigate relationships between parental practices and child outcomes when both mothers' and fathers' behaviors were simultaneously included as predictors to children's representation scores. As was the case with previously reported regressions, control variables of social class, family constellation, and interactions between these factors were entered into the analysis before parental behaviors. When the mothers' and fathers' scores were entered into the analysis together for each of the child assessment variables, a somewhat different picture emerged in contrast to the analysis of each parent separately. Results of the regression analysis are presented separately for the two tasks in Table 21.

Regardless of the interaction task, mothers' and fathers' behaviors produced significant increments in multiple correlation coefficients with nearly equal frequency (in 13 instances for fathers and 11 for mothers on the story task and in 12 instances for mothers and 12 for fathers on the paper task). On the story task, mothers' high level mental operational demands were related to children's recognitory memory, logical classification groupings, and groupings based on descriptive characteristics. In addition, fathers' use of intermediate level statements was negatively related to groupings based on descriptive characteristics. For the social cognition tasks, fathers' use of low level mental operational demands during storytelling was negatively related to children's withdrawal strategies on the interpersonal problem-solving task and to high level definitions of friendship. Mothers' scores

Table 21

Multiple Correlation Coefficients for Parental Storytelling and Paper-Folding Behaviors and Selected Child Assessment Variables

Time to Reconstruct Array (SRI)

Social class	.20*
Family constellation	.34*
Interaction terms	.36

Parental Behaviors on Storytelling Task		Parental Behaviors on Paper-Folding Task	
Attention getting (Fathers)	(-).40	Takeover intrusions (Fathers)	.54
		Takeover intrusions (Mothers)	.59
		# Interaction units (Mothers)	.65

Recognition (SRI)

Social class	.13
Family constellation	.20
Interaction terms	.30*

Helping intrusions (Mothers)	.37	Intermediate level statements (Fathers)	(-).40
# High level mental operational demands (Mothers)	.41	Diverting (Mothers)	.46

Correct Sequence Pairs Reconstructed (SRI)

Social class	.15
Family constellation	.21
Interaction terms	.24

Out of contact (Fathers)	.35	# High level mental operational demands (Fathers)	.39
		Attention getting (Mothers)	(-).46
		Child passively engaged with parent (Mothers)	.50

Table 21 (Continued)

Parental Behaviors on Storytelling Task				Parental Behaviors on Paper-Folding Task	
		Correct Items Reconstructed (SRI)			
		Social class	.01		
		Family constellation	.13		
		Interaction terms	.13		
# Interaction units (Fathers)	(-).28			# High Level mental operational demands (Fathers)	.35
				Attention getting (Mothers)	(-).40
		Prediction of Transformation (Conservation)			
		Social class	.11		
		Family constellation	.21		
		Interaction terms	.31*		
				No time for child response (Mothers)	.39
				# Statements (Mothers)	.45
				Positive nonverbal supports (Fathers)	.50
				Child passively engaged with parent (Fathers)	(-).54
		Anticipation of Rotation (KAI)			
		Social class	.08		
		Family constellation	.10		
		Interaction terms	.22		
Child passively engaged in other activity (Fathers)	(-).36			Takeover intrusions (Fathers)	(-).29
Child passively engaged in other activity (Mothers)	(-).41			Attention getting (Fathers)	.34
		Maintenance of Anchor Point (KAI)			
		Social class	.21*		
		Family constellation	.24		
		Interaction terms	.28		
--				--	

Table 21 (Continued)

Parental Behaviors on Storytelling Task				Parental Behaviors on Paper-Folding Task	
		Logical Classification Groupings			
		Social class	.18*		
		Family constellation	.22		
		Interaction terms	.22		
# High level mental operational demands (Mothers)	.33			--	
		Groupings Based on Descriptive Characteristics			
		Social class	.19*		
		Family constellation	.27		
		Interaction terms	.30		
Intermediate level statements (Fathers)	(-).36			--	
# High level mental operational demands (Mothers)	.42				
		Groupings Based on Logical Classes			
		Social class	.01		
		Family	.11		
		Interaction terms	.17		
--				Diverting (Mothers)	.40
				No mental operational demands (Fathers)	.44
		Withdrawal Interpersonal Strategies			
		Social class	.06		
		Family constellation	.24*		
		Interaction terms	28		
# Low level mental operational demands (Fathers)	(-).38			Helping intrusions (Mothers)	(-).36
No time for child response (Fathers)	.44				
Child actively engaged in other activity (Fathers)	(-).48				
Verbal approvals (Fathers)	(-).51				
Out of contact (Fathers)	(-).54				

Table 21 (Continued)

Parental Behaviors on Storytelling Task		Parental Behaviors on Paper-Folding Task	
Logical Rationales for Rules and Conventions			
Social class	.33*		
Family constellation	.34		
Interaction terms	.39		
Child actively engaged in other activity (Mothers)	(-).44		
Knowledge of rules and Conventions			
Social class	.29*		
Family constellation	.29		
Interaction terms	.31		
Child actively engaged in other activity (Mothers)	(-).42	Attention getting (Mothers)	(-).39
# Low level mental operational demands (Mothers)	(-).45	Child actively engaged in other activity (Fathers)	(-).43
Correction of child (Fathers)	(-).48	No time for child response (Fathers)	(-).46
Low Level Definitions of Friendship			
Social class	.05		
Family constellation	.18		
Interaction terms	.18		
Correction (Mothers)	.29	Verbal disapprovals (Mothers)	.33
Verbal disapprovals (Mothers)	.35		
High Level Definitions of Friendship			
Social class	.16		
Family constellation	.17		
Interaction terms	.21		
# Low level mental operational demands (Mothers)	(-).32	No mental operational demands (Fathers)	(-).30
Positive nonverbal supports (Fathers)	.39		
# Low level mental operational demands (Fathers)	(-).43		

Note. All R's for relationship between parent behaviors and child outcomes are significant at $p < .05$.

*Indicates p of .05 or less for demographic variables.

(-) Indicates direction of zero-order correlation.

for the low level mental operational demands were negatively related to children's knowledge of rules and conventions and high level definitions of friendship. These findings are consistent with predictions based on distancing theory, i.e., low level demands were negatively related to children's performance levels and high level mental demands by parents were positively related to children's levels of representational competence.

Analysis of the relationships between mothers' and fathers' distancing behaviors during the paper task and children's performance scores yielded significant increments in multiple correlation coefficients in four instances. Fathers' use of intermediate level statements was negatively related to children's recognition scores. High level mental operational demands placed on children by fathers during the course of the paper-folding task predicted children's ability to correctly reconstruct an array from memory and to recall correct sequence pairs in the array. Finally, the number of statements evidenced by mothers was related to children's conservation predictions.

As Table 21 indicates, a number of behaviors from the emotional support and cohesion categories also produced significant increments in multiple correlation coefficients. Use of attention getting strategies was generally negatively correlated with child outcomes (time to reconstruct an array, correct sequence pairs, correct items reconstructed, knowledge of rules and conventions). Parents who evidenced helping or takeover intrusions generally had children who took longer to reconstruct an array from memory and evidenced lower scores for anticipation of rotation outcomes and withdrawal interpersonal strategies. These findings indicate that restricting the child or introding into the child's own activity sphere may interfere with the development of representational capabilities.

In summary, results of analysis of parental behaviors across tasks and in relation to child outcomes indicate that generalizations regarding influence between parent and child are mitigated by the nature of the task, sex of the participants, social status and family constellation factors. Several generalizations are possible at this stage of the research effort. Distancing strategies used by parents were related to children's representational competence, and both sets of measures varied with home environment features such as family constellation and SES. Fathers were generally more consistent in their use of such strategies across tasks than mothers were. There is some evidence that effects of fathers' and mothers' behaviors may supplement or complement each other with regard to child outcomes. In spite of the complexity of results pertaining to parental teaching strategies, there is reason to believe that aspects of children's intellectual development is influenced by how parents use distancing strategies.

Path Analysis of Family Influences[2]

The conceptual model guiding this research was presented in Chapter I. It was hypothesized that a relationship would exist between demographic characteristics, such as parents' education, parents' ages, and family constellation, and parental constructions of children's cognitive development. Further, parents' beliefs about child development processes were expected to influence the strategies they used to teach their children during two observed interactions. Teaching strategies would in turn influence the children's level of representational competence. Parents' child development constructions were hypothesized to be influenced by children's representational competence, as their expectations with regard to their children's capabilities would be confirmed or negated by their children's actual representational performance.

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[2] The authors of this report are deeply indebted to Dr. Donald Rock for sharing his time, ideas and expertise regarding causal analysis, and his assistance in writing this section.

Many investigators (Blalock, 1971; Duncan, 1975; Freeberg & Rock, 1975; Hanushek, 1970; Jöreskog, 1973; Levine, 1970; Michelson, 1970; Rock, Werts, Linn, & Jöreskog, 1977; Werts, 1970) have argued that single equation models do not mirror reality since they are restricted to oversimplified notions of the types of relationships which are likely to be found between a set of explanatory variables and the dependent variable, and thus, in the long run, must be superseded by more sophisticated multiple equation structural models. There are a number of substantial benefits to be derived from the application of simultaneous equation models to the data of this study. First, since such an approach begins with an a priori substantive model based on the interpretation of theory, in this case distancing theory, the final model of family influence that is achieved is more likely to yield interpretable results than one based on strictly exploratory procedures (such as stepwise regression) and is more likely to be generalizable to other samples. In addition, such an approach allows for a hypothetical causal structure among dependent variables. That is, a structural equation approach provides information on indirect effects on children's representational abilities, for example, family constellation affects parental practices which affect children's representational abilities. Statistical models that simulate a family influence system without taking into account the possibility that certain dependent variables (such as distancing strategies) mediate the effects of more prior variables (family constellation, for example) are likely to be oversimplifications and to yield a less than realistic picture of family systems.

Another oversimplification of family influence inherent in the traditional least squares single regression format is that such modesl imply unidirectional influence, either from parent to child or child to parent. Within the context of the family, each member influences others in the unit. That is, one parent's beliefs and behaviors do have an impact on the child, but the child's behaviors and abilities in turn affect the parent, whose beliefs and/or behaviors are modified as a result. Assuming that distancing theory enables selection of variables to fully identify such a model of mutual influence, estimation of unknown path coefficients can be accomplished within the structural equation approach.

As a result of the above considerations, the effects of family constellation factors on children's representational competence were investigated within a path model of the family as a system of mutual influences. In fact, two models were tested, based on the distancing framework. In the first model, family size was included as the major independent variable and data from all 120 families (40 only-child families versus 80 three-child families) were utilized. The second model included child-spacing rather than number of children as the major independent variable, and data obtained from the 80 three-child families were used in this analysis. Comparison of path coefficients obtained in the two analyses enabled contrast of effect of family size and birth intervals.

Variables included in the causal analyses differed in nature from those utilized in previously reported descriptive and exploratory correlational procedures. In some cases, variables were refined to produce single composite scores (for example, principal component scores were used as composite constructs for parental beliefs, parental behaviors and children's representational thinking abilities). In other cases, continuous variables were used rather than grouping individuals into categories (for example, actual spacing between children in months was used as a spacing variable rather than grouping families as near- versus far-spaced; number of years of school represented educational level of parent rather than grouping families as working- versus middle-class). These variables were submitted in order to reduce the influence of measurement error on the outcomes.

All principal component scores used in the path analyses were based on the first component obtained from an orthogonal rotation in a two-factor solution. Scores for mothers' and fathers' beliefs were obtained from a principal component analysis of construction of the child variables. The first principal component obtained for mothers accounted for 55.40% of the variance in the two-factor solution (15.20% of the total variance) and was comprised of the following variables: confidence in beliefs (.41), experimentation (.36), stages (.37), readiness (.46), conflict (.43), balance (.32). This component represents mothers' beliefs that children's knowledge develops through abstraction from experience. Fathers' scores were analyzed in a similar manner. The first principal component accounted for 59.50% of the variance in the two-factor solution and 17.70% of the total variance. Variables that loaded on the first component were: confidence in beliefs (.43), accumulation (.30), cognitive reorganization (.54), experimentation (.33), stages (.54), negative feedback (.33), positive feedback (.48), and readiness (.39), indicating beliefs that children's knowledge develops as a function of interactions between internal processes and feedback from the environment.

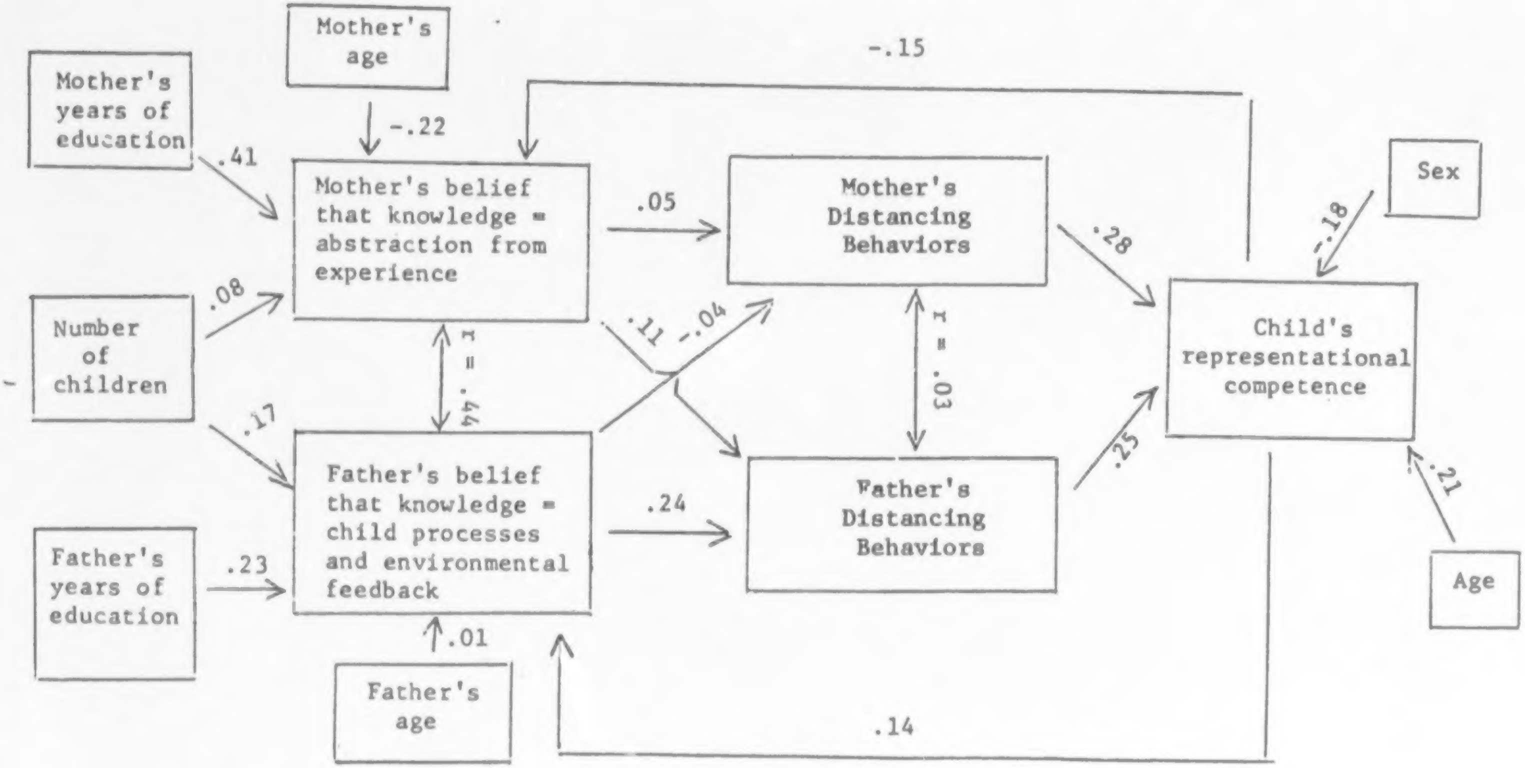
Parent behavior scores on both tasks were also subjected to principal component analysis. Composite variables for distancing (weighted and summed), positive supports (verbal approvals, positive nonverbal behaviors and feedback behaviors), negative supports (verbal disapprovals, negative nonverbal behaviors, helping and child management) and structuring behaviors (structuring, attention-getting and diverting) were included in each analysis. The first principal component obtained from a two-factor solution for mothers' behavior scores accounted for 70% of the variance (23.10% of the total variance). This component consisted of task structuring behaviors (-.99) and high level distancing scores (.65) assessed during the paper task. The first principal component for fathers accounted for 64.60% of the variance in the two-factor solution and 22.90% of the total variance. High level distancing scores for the paper task (.71) and the story task (.35) as well as task structuring scores for the paper task (-.69) comprised this component.

The first component obtained from the principal component analysis of the child assessment data accounted for 64.40% of the variance in the two-factor solution (16.90% of the total variance). It was composed of variables from both physical and social knowledge tasks. Groupings based on descriptive characteristics (.54), number of logical groupings (.49), sequence pairs reconstructed correctly (.50), number of items recalled (.34), high level definitions of friendship (.30), knowledge of rules and conventions (.57), high level rationales for rules and conventions (.58), engaging interpersonal strategies (.61) and predicted effectiveness of interpersonal strategies (.48) composed this factor, which was labeled children's representational competence level.

Results of the path analysis that included number of children as an independent variable are presented in Figure 3. One-way arrows indicate a causal relation, while two-headed arrows do not imply a direction of causality, i.e.,

Figure 3

Path Analysis of Mutual Influences within Families with Either One or Three Children
(N = 120 families)


Mother's age
-.22
Mother's years of education
.41
Number of children
.08
.17
Father's years of education
.23
Father's age
.01
Mother's belief that knowledge = abstraction from experience
r = .44
Father's belief that knowledge = child processes and environmental feedback
.05
.11
-.04
.24
Mother's Distancing Behaviors
r = .03
Father's Distancing Behaviors
.28
.25
Child's representational competence
-.15
.14
Sex
-.18
Age
.21

represent correlations. As indicated in Figure 3, younger mothers and mothers with more education were more likely to believe that children's knowledge develops through stages and is based on experience. These beliefs, however, did not account for maternal distancing behaviors. Mothers' behaviors were related to children's representational abilities, and the feedback loop back to beliefs indicates that the higher the child's ability, the less the mother believed in her original construction of the child.

As with mothers, fathers' educational level affected beliefs that knowledge is a result of an interaction between the organism and environment, although not to the same degree as the mothers' education level. Age of father does not appear to be an influence on beliefs, but number of children produced a path coefficient twice as high for fathers' beliefs as for mothers' beliefs. The fathers' constructions did influence their behavior. Fathers who believed in a interactionist view of development tended to be lower in structuring behaviors and higher in distancing behaviors. In addition, these behaviors affected child outcomes. Lower levels of structuring and higher levels of distancing behaviors were related to higher levels of representational competence in the children. The positive nonrecursive effect from children's ability to fathers' beliefs indicates that children's representational competence tended to confirm or reinforce their constructions of child development.

It is also interesting to note that mothers' and fathers' constructions were related to one another, and that mothers' constructions had a slight impact on fathers' behaviors, but behaviors of mothers' and fathers' were not significantly correlated. This suggests that parents may construct their beliefs together, but that their behaviors tend to complement each other rather than be consistent across pairs of parents. Mothers' and fathers' behaviors both appear to contribute to the child's development of representational competence in spite of the fact that mothers in this sample were the primary caregivers and that mothers' behaviors were not related to their beliefs. In addition, the representational ability of female children was higher than that of males and age of the child affected level of representational competence.

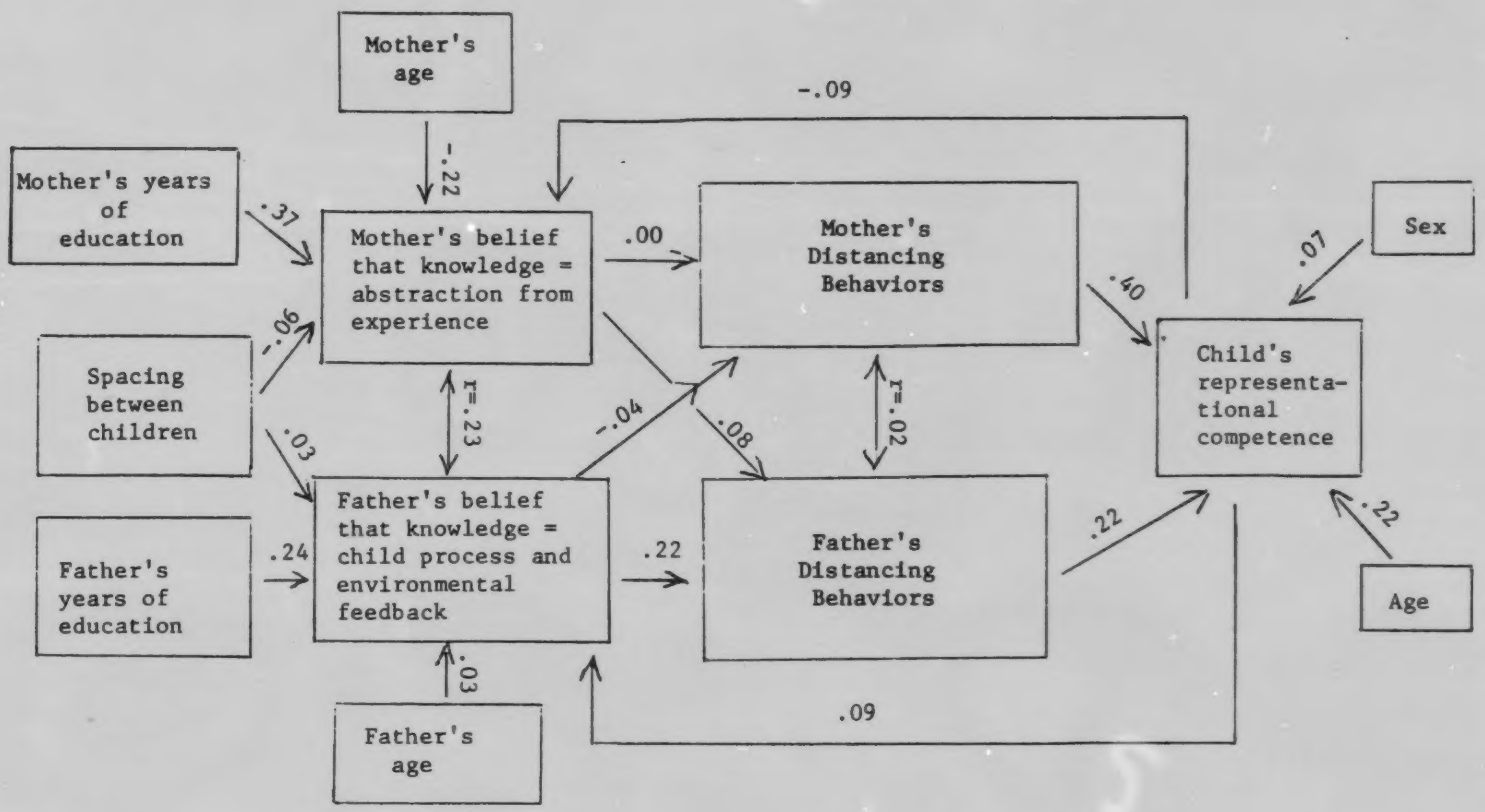
Results of the analysis of the path model that included spacing between births as the major dependent variable (conducted on a subset, i.e., 80 of the total sample of families) were consistent with the results above for the most part (see Figure 4). Parental education affected beliefs and younger mothers tended to posit that children's knowledge is a result of abstraction from experience. Spacing appears to have little effect on the beliefs of either mothers or fathers.

Relationships between parental beliefs, behaviors and child outcomes were similar to those obtained with the path analysis of the entire sample of 120 families. The influence of mothers' distancing behaviors on children's representational competence was, however, found to be somewhat higher for these three-child families than was the case for the sample as a whole. In addition, the influence of sex of child and the nonrecursive feedback element of the model was lower for the three-child families. The latter finding suggests lessened impact of the child's ability on parental beliefs.

In summary, results of the path analyses generally supported the proposed model of mutual influences within the family. However, the lack of relationships between number of children, maternal beliefs and maternal behaviors suggest a need for reconceptualization and modification of portions of the model. For example, it is possible that some alternative set of beliefs is the source of

Figure 4

Path Analysis of Mutual Influences within Three-Child Families with 10 to 68 Months Birth Spacing (N = 80)


Mother's age
-.22
-.09
Mother's years of education
.37
Mother's belief that knowledge = abstraction from experience
.00
Mother's Distancing Behaviors
.40
Sex
.07
Spacing between children
-.06
.03
r=.23
-.04
.08
r=.02
Child's representational competence
Father's years of education
.24
Father's belief that knowledge = child process and environmental feedback
.22
Father's Distancing Behaviors
.22
.22
Age
.03
Father's age
.09

distancing behaviors or that mothers' distancing strategies stem from factors not included in this study. The former explanation is less plausible than the latter for two reasons. First, the variables that comprised the principal component representing mothers' beliefs that child development is a result of abstracting from experience are consistent with the theoretical underpinnings of distancing theory (cf. Sigel, 1979). Second, the principal component obtained for mothers was similar to that obtained for fathers, and a relationship between such beliefs and distancing was obtained for fathers. It is therefore likely that the dynamics between beliefs and behaviors differ for mothers and fathers. Recall that most families in this study were traditional but not typical American families. Most of the children spent all day with their mothers, who were largely responsible for caring for the child. One possibility is that mothers have a greater variety of alternative strategies available and know which approach is most efficacious in a particular situation as a result of their greater experience with the child. Their behaviors therefore stem from knowledge of what works with this child in a specific context rather than from beliefs about how children in general develop knowledge.

On the other hand, fathers in this sample have had less opportunity to gain specific information about strategies that do work with their own child. In the absence of knowledge of strategies that specifically work with their own child their behaviors are more likely to reflect beliefs about children in general. Thus, mothers' distancing behaviors may be a result of the mothers' knowledge of her own child, of what her own child is capable of, and being "in tune" with the child's level of ability, while the fathers' distancing behaviors are a result of their beliefs about children in general.

Chapter IV

General Summary and Discussion

Summary of Results

The primary objective of this investigation was to assess the relationships among demographic variables such as SES and family constellation, process variables such as parental beliefs and teaching strategies, and children's level of representational competence. Relationships among these variables were conceptualized as interactive rather than unidirectional. A complex interplay of factors was found to occur within the family relative to parents' influence on children as well as children's effect on parents. The results will be briefly summarized below.

Children's Representational Competence: Discriminant function analyses indicated that only children could be differentiated from children in three-child families on the basis of performance on representational thinking tasks. When SES was considered in addition to family constellation, discriminant analyses indicated that children from working-class families with near spacing between children and from middle-class families with far spacing between children were similar to one another and different from other groups in their representational ability.

Analyses of variance conducted on children's scores on the representational thinking tasks yielded interaction effects between family constellation, SES and sex of child. With respect to family constellation, results indicated strengths and weaknesses that favored only children in some content areas and children with siblings in other content areas.

Parental Beliefs: Beliefs of parents with only children tended to differ from parents of three children, regardless of differences in spacing between the first and second children in the three-child families. Parents of only children expressed the beliefs that children develop concepts through adult instruction and guidance more often than parents of three children. Parents of three children, on the other hand, expressed beliefs that children develop through self-regulatory processes more often than parents of an only child.

Variation in parental beliefs with differences in child spacing were found to occur only when family constellation was considered in relation to socioeconomic status. The interaction effects involving family constellation and SES obtained for parental beliefs tended to parallel the findings from the discriminant analysis of children's representational ability scores. Parents of working-class near-spacing families and of middle-class far-spacing families were similar to one another and different from other groups in referring to the significance of self-regulatory processes and inferences based on observation. Thus, for both parent beliefs and child outcomes, one-child families differed from three-child families and child spacing was an important factor only when considered in conjunction with SES.

When family constellation, SES and parental beliefs were considered in relation to parental behaviors, it was found that beliefs predicted parental practices above and beyond demographic characteristics. Beliefs that were consistent with the theoretical framework underlying distancing theory tended to be related to distancing behaviors evidenced by parents during interactions with their child.

Parental Behaviors: Parental behaviors were found to vary with a variety of factors, but the most consistent finding was that parental behaviors varied with the paper and the story tasks. Distancing behaviors were more frequent during the storytelling task, while task structuring and emotional support behaviors occurred more often during the paper-folding interaction. Fathers showed some consistency in terms of distancing behaviors across tasks, while structuring and emotional support behaviors of mothers correlated across task content. Parental behaviors were related to child outcomes above and beyond the demographic characteristics of SES and family constellation. Significant increments in multiple correlation coefficients and child variables were obtained with distancing variables, emotional support variables and task structuring variables.

The results reported thus far are in a sense fragmented. That is, relationships between parental beliefs and behaviors or between parental behaviors and children's representational competence were examined in separate analyses. Path analysis provides a way of testing the interactive nature of a model of family influence. The proposed model includes interrelationships among classes of variables, i.e., that parental constructions of children's development serve as a determinant of that class of parental behavior (distancing) relevant to children's representational competence. In addition, parental beliefs are viewed as products of the parents' educational experience and experience with their own child(ren). Hence, we have developed a model of mutual influence in which parental beliefs are affected by parental educational level, age, number of children and their own child's level of ability. These beliefs are seen as the source of parental distancing behaviors which impact the child's cognitive development.

Path Model of Family Influences: Path analyses of the model of mutual influences between parents and children indicated that distancing behaviors of both mothers and fathers, as well as sex and age of the child, impact the child's level of representational competence. Fathers' distancing behaviors, but not mothers', were found to stem from beliefs about child development in general. Level of education was found to be a significant determinant of beliefs for both parents. In addition, younger mothers were more likely than older mothers to believe children acquire knowledge through abstraction from their own experience. Number of children affected fathers' beliefs but had minimal impact on mothers' beliefs. Spacing between children did not appear to affect either mothers' or fathers' beliefs. The ability level of the child appeared to have an effect on parental beliefs and mothers' beliefs had a slight impact on fathers' behaviors.

Discussion and Conclusions

Within the framework of this study, children's representational competence is viewed as a result of the history of parent-child interactions that children have experienced. Parents' and children's behaviors were not evaluated in a shared experimental situation. Rather, children's representational competence scores were obtained from assessments that were administered independently of observations of parent behaviors. Significant relationships between these two sets of variables can therefore be viewed as a product of the history of the child's experience interacting with each parent in a familial context. Evaluation of the data from this perspective provided strong support for the hypothesis that parental distancing strategies are related to the development of representational thinking in children. In addition, distancing behaviors of parents were found to transcend factors such as family constellation and

SES in relation to child outcomes. Thus, it appears that variables stemming from the parent-child relationship can account for findings that intellectual functioning varies with demographic characteristics of the family of origin.

With respect to the family taken as a unit, results of path analysis indicated the utility of focusing on the manner in which behaviors of one member are influenced by other members. For example, there was some support for the hypothesis that the parent-child relationship consists of reciprocal influences. In addition, maternal beliefs appear to have a slight but direct impact on fathers' behaviors and mothers' and fathers' beliefs overlap to some degree. Such findings explicitly point out the complexity of sources of influences within the family. The model we have proposed has several limitations and is no doubt a simplified version of the types of influences that occur within the family context. The impact of other children on both parents and the target child were not included for example. This model is, however, a first step in examining the complex interrelationships among individuals within different structural contexts of the family.

As was the case for relationships between parental behaviors and child outcomes, the results pertaining to parental beliefs manifested the same complexity of interactive effects. The relationships of parent beliefs to their behaviors were generally consistent with our expectations when discrete belief and behavior scores rather than principal component scores were analyzed. That is, parental teaching strategies tended to be related to specific beliefs in child development and distancing strategies in particular varied with the extent to which beliefs reflected a view of the child as an active information processor who constructs his/her own reality.

Interview data pertaining to parents' preferred and predicted teaching and management strategies were less potent as predictors of parents' actual behavior than parents' beliefs. This suggests that the parent's view of the child is a more salient variable than parental reports of ideal or prototypic ways of interacting with the child. It is possible that information pertaining to the parents' cognition about children in general is less subject to fluctuation with varying contexts in which the interaction occurs and is therefore related to behavior that occurs in a variety of teaching tasks. The high number of parental references to constraints during the interview suggests that parents respond to the situation in which the interaction takes place, adapting or modifying their behavior accordingly.

The results of this study point out most explicitly the complexity of embarking on research with the family that involves a host of factors which certainly complicate analyses. Yet, we did not include all the other possible factors that operate in the family--e.g., father-mother interactions in the presence of the child, parental dealing with self-conflict or any other type of conflict. It is easy to imagine how complex the situation can be. In spite of our consideration of a limited number of variables, we did achieve sufficient convincing data to warrant not only our confidence in our results, but also to highlight the complexity. Let it not be thought that research with the family is simple since there are so many factors to identify and to trace their impact.

Parental distancing strategies are influential in a context of family interactions. Identifying the role of this class of behaviors and demonstrating their impact, leads us to research for more precision in identifying a broader contextual base in which they function.

Developing the theme of the family complexity and the embeddedness of distancing strategies in the broader context of the family, suggests that further research requires the following:

(1) To examine the role of other familial relationships, e.g., sibling interactions in the development of representational competence.

(2) To examine the effects of larger family units on the same class of dependent variables.

(3) To evaluate the effect of alternative family constellations, e.g., single parent family, adoptive parents and children, etc.

(4) To evaluate the relationship between affective and family atmospheric variables on children's development.

In addition to the substantive type question there are a number of methodological issues which we have presented in the body of this report. Essentially, this project was a major first step in a complex undertaking examining the distancing theory in the familial context.

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Appendix A

COMMUNICATION BELIEFS QUESTIONNAIRE AND INTERVIEW ADMINISTRATION AND CODING MANUAL

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Overview

The questionnaire and interview schedule presented in this manual has been developed to assess parental childrearing beliefs. This measure consists of five parts: (1) The Communication Strategy Questionnaire which assesses parental beliefs about parent-child communication strategies in different types of situations, (2) the Communication Strategy Interview, a postquestionnaire interview which evaluates parental rationales for stated communication preferences and elicits self-predictions regarding communication strategies, (3) the Construction of the Child Interview which contains items that explore the parent's construction of the child as a cognitively, socially and behaviorally developing organism, (4) the Changing Beliefs Interview consisting of interview items which examine reported changes in the construction of the child and in communication strategies as a result of interaction with other four-year-old children, and (5) the Sources of Beliefs and Family Structure Beliefs Questionnaire and Interview, a composite of questionnaire and interview items which concern parental views both on the origins of beliefs and on the effects of family structure on a child's development. The administration of each section of this measure is contingent upon each of the preceding measures. That is, the questionnaire (1) may be administered as a separate measure, but the Communication Strategy Interview (2) cannot be given unless the questionnaire has been administered prior to the interview, etc. All interviews are recorded on cassette tapes. Each portion of this measure will be briefly described below. The specific content of each measure is included in the appendix of this manual.

(1) Communication Preference Questionnaire: The questionnaire consists of 12 hypothetical situations involving a parent and a four-year-old child.

Three types of situations are included: (a) Teaching physical facts and principles, (b) promoting social skills and norms, and (c) behavior management. There are four instances of each type included in the questionnaire. Two situations of each type are positive instances of the behavior in question; that is, the child is not evidencing a misconception or misbehaving. Two are negative instances, in which the child expresses an incorrect idea or a type of misconduct. The parent responds to each situation by ranking four response strategies in order of preference. The four types of responses presented for each situation are: Distancing, rational-authoritative, direct-authoritative, and diverting. Situation types and response types are defined and illustrated in subsequent sections of this paper.

(2) Communication Strategy Interview: The 12 situations presented in the questionnaire comprise the content of the Communication Strategy Interview. After the parent has completed the rankings for all 12 questionnaire items, the interview is administered in order to elicit rationales for preferred and predicted communication strategies. Before the interview begins, the parent is informed that any response may now be introduced for discussion if he believes it to be a better communication strategy than those included in the questionnaire. Three principal questions are presented for each of the 12 situations. First, parents are asked to provide a rationale for the specific response they believe to be best for the situation. As part of this question, the objective behind the preferred strategy is determined. Secondly, parents are required to predict their own response as if they were actually dealing with their own four-year-old in this type of situation. Again, parents are asked to provide rationales and to state what they were hoping to accomplish by performing the indicated response. Lastly, parents

are requested to identify and explain the response they would probably use if the predicted first strategy were not successful in accomplishing their objectives.

(3) Construction of the Child Interview: After communication strategies have been discussed for a particular situation, the parents are presented with a series of questions designed to elicit their view of the four-year-old child and of child development in general. The focus of the Construction of the Child Interview items is uniform across the 12 situations, in that parents are asked to describe how they think four-year-olds acquire certain concepts and capabilities. These probes are phrased in terms of four-year-old children throughout the interview, but the content of each child-construction probe stems from the issues inherent in the particular situation previously discussed for communication strategies. The parent's construction of the child is then inferred from an analysis of the constructs referred to by the parent over the 12 situations. Although the specific content of the questions varies across situations, they are all directly related to several underlying dimensions.

(4) Changing Beliefs Interview: After the 12 situations have been discussed for communication strategy rationales and for construction of the child, the parents are asked either to go back to the time when their oldest child was four years old, or to imagine that time has passed and a younger sibling is now four years of age (depending on the structure of the particular family). Parents are then asked to predict communication strategies relative to this "other" child for three of the situations which were previously discussed for the four-year-old. One of each type of situation (teaching, social, management) is included in this portion of the interview. Parents

are also asked what the secondary, follow-up strategy would be, if the first strategy failed to resolve the situation. Finally, parents are asked if, and how, the ideas expressed in response to the child-construction probes have (or would) change as a result of experience with more than one four-year-old child. Thus, parents with older children provide a retrospective report of changes in behaviors and beliefs as a result of increased experience with four-year-olds, and parents of only children or younger children anticipate how their beliefs and practices might change with similar experience.

(5) Source of Beliefs and Family Structure Beliefs Questionnaire and Interview. Prior to filling out the Communication Strategy Questionnaire, the parent completes a face sheet that includes items relating to family structure and its effects on childrearing beliefs. Parents indicate their opinion of the ideal family size and spacing, and write a short comment as explanation. In addition, parents are asked to rate a number of variables in terms of their influence on their own childrearing practices. A three-point Likert-type scale is employed.

After the 12 situations in the questionnaire and after changes in beliefs have been discussed in the manner described in (4) above, a short interview pertaining to sources of influences on childrearing beliefs is administered. Parents are also questioned as to how they think family size, spacing and birth order affect a child's development and why children in family might be similar or different from one another. Lastly, the parent is asked to describe or to anticipate how the time spent with the children in the family changes as younger siblings are born.

Theoretical Rationale

The objective of this research is to examine several environmental variables, in terms of their content and the extent to which several environmental variables influence the child's cognitive functioning. This study focuses on variables present in a specific portion of the child's environment--the family. In particular, the design includes population variables and parental beliefs and practices. Thus, two major parameters of the home environment have been included as possible determinants of the child's cognitive development.

The two parameters were selected for investigation on the basis of two theoretical models that have been united in an attempt to specify the relation between population variables and cognitive-developmental variables. One theoretical model that focuses on family structure is that of Zajonc and Markus (1975). These authors have presented data that relates IQ scores to family size and spacing. In general, the larger the family and the closer the spacing between children, the less likely the child is to perform well on measures of IQ. While several explanations of the correlation have been posited, the most popular view is that differential amounts of parental attention between families could account for this relationship (cf. Marjoribanks, Walberg, & Bargen, 1975).

Sigel (1968), while not specifically addressing family structure issues, has presented a theoretical framework that relates cognitive development to specific types of experiences presented to the child by the environment. This model emphasizes an adult-child interactional system wherein the quality of stimulation of thought is a primary environmental factor influencing cognitive processing in general and representational competence in particular.

Within this framework, specific types of experiences enhance thinking on the child's part, while others are not particularly effective. As a major part of the young child's environment, the parent may provide opportunities for the child to use cognitive processes in order to understand some phenomenon or to respond to a question posed by the parent. A complete description of particular adult behaviors that put a demand on the child to think and represent is not warranted in this paper. However, the specification of the nature of effective types of behaviors provided by Sigel's distancing theory may afford the needed precision to translate population models to a functional psychological plane.

While parental behaviors are held to be an immediate environmental influence on children's intellectual functioning (as transmitted through interactions with the child), the adult's view of the child and his beliefs of how one should communicate with the child are a critical subset of determinants of that parent's behavior (in conjunction with situational factors). An adequate description of the child's home environment should therefore include population variables, parental practices and parental constructs of childrearing and developmental processes.

The questionnaire and interview schedules presented within this paper were designed to examine parental constructions of the child and beliefs about childrearing, embedded within family structure, and to investigate the relations between these constructs, as they affect the child's intellectual development. The focus of these measures is not only to assess parental beliefs about children in general, but childrearing beliefs in the particular case as well.

Content of Communication Strategy Questionnaire

Content: The questionnaire consists of 12 hypothetical situations which involve a parent and a four-year-old child interacting within the context of a situational problem or "critical incident." Considerations of typicality and diversity governed the selection of the hypothetical situations in order to insure that parents could relate to them and so that parental responses could be obtained over a wide range of circumstances. One-half of the situations present "Mother" as the parent and one-half present "Father." Within this dichotomy, half of the situations involve a female child and half involve a male child. All toys, settings and activities presented within the situation were selected as representing neutrality with respect to sex-role stereotypes.

Within the set of 12 hypothetical situations, four are concerned with teaching facts and principles to the child, four with the child's social skills and interactions with others, and four with management of the child's overt behavior. Of each situation type, half are positive instances and half are negative. The positive-negative dichotomy will be explained within the definitions of types of situations presented below.

A teaching situation is defined as one in which the parent and child are involved in an information exchange in which the primary focus is on cognitive content. This content involves either the learning of some information or the attainment of a concept. The content of the interaction involves some feature of the physical environment. A negative teaching situation is one in which the child has expressed or evidenced some misconception. A positive situation is one in which the child has no apparent misunderstanding or misconceptions about the subject matter and is simply acquiring new information or knowledge.

A social situation is defined as one in which the parent and the child are engaged in an exchange where emphasis is placed on the child's interpersonal capabilities or environment. The content may involve prescriptions and proscriptions regarding social situations or it may involve some social skill, such as role-taking. A negative situation is one in which the child is evidencing a noticeable lack of some social skill or failing to interact with another in a socially appropriate manner. A positive situation is one which provides an opportunity to encourage a social response, but the child is not evidencing socially inappropriate behavior.

A management situation is defined as one in which the focus is on the child's overt behavior with some object in his physical environment. A negative situation is one in which the child is misbehaving and termination of the misconduct is desired. A positive situation is one in which the child is not actually misbehaving but he is not engaged in a behavior that complies with the immediate demands of the situation. The 12 hypothetical situations, including the four response options, are presented by situation type in the Appendix.

The order of presentation of situations was determined by assigning a number to each situation and then sequencing them through the use of a random number table (Winer, 1971, p. 881). The three situation types and the positive-negative dichotomy were included in the questionnaires in order to ascertain response consistency within and across variability in content and severity of child behaviors. The purpose is to explore the extent to which communication strategy preferences and self-predictions are influenced by situational factors. The same communication strategy may be responded to differently by parents in different situations because of possible foreseen differential consequences in terms of the child's cognitive state, selfesteem, etc. These possibilities are examined when the rationales for their response selections are elicited from parents in the Communication Strategy Interview.

Response Options: The communication strategy response options included in the questionnaire were selected to represent a range of appropriate behaviors for a parent to engage in with a young child. The four response options can be thought of as varying in the extent to which an explicit demand is made for the child's active problem-solving involvement.

The "distancing" response option is an interactional communication strategy in which the child's active cognitive and verbal participation is invited through a verbalization that functions as an inquiry directed toward the child. The "authoritative" response options (rational and direct) are one-way communication strategies that do not stimulate the child's active verbal participation, but are directed at the situational issue through didactic methods. The authoritative options differ in amount and type of cognitive content conveyed to the child: (1) statements that include a logical explanation (rational), and (2) statements that iterate an observable fact, but without an explicit explanation. Finally, the "diverting" response option is a noninvolvement strategy in the sense that no demand is made on the child to direct himself to the situational issue. Rather, the parental statement permits and encourages the child to disengage from the problem at hand.

These four response options were selected as representations of different levels of distancing potential. While no options presented in questionnaire form can fulfill all the requirements of distancing behaviors described by Sigel (1972), the "distancing" strategy contains the highest potential for a distancing experience for the child, followed by rational-authoritative, direct-authoritative and diverting strategies. The questionnaire items and response options are presented at the end of this section.

Administration Procedure: Each questionnaire is administered individually to both the mother and to the father. The interviewer first establishes rapport with the parent and explains the purpose of the Communication Strategy Questionnaire and the Communication Strategy Interview. The parent is than asked to read and sign the consent form. The interviewer presents the printed instructions to the parent and informs him or her that questions for clarification may be asked at any point. The parent fills out the questionnaire at his own pace with the interviewer present.

Communication Strategy Interview

Interview Questions, Alternatives, and Probes: The interviewer is required to avoid certain statements in conducting the interview. While it is permissible to paraphrase questions in order to clarify ambiguous responses, extreme caution should be maintained by the interviewer to avoid leading or embarrassingly repetitious questioning. For this reason, alternate probes and follow-up probes have been constructed. The following three sets of questions and their accompanying probes would be asked according to the following schedule:

Preferred Communication Strategies

1. What do you think is the best way for a parent to handle such a situation?

   Alternate: What is the best response for a parent to make in this situation?

2a. Why do you think that this response is the best response in this situation?

   Alternate: What makes this response the best one for this situation?

If the parent does not provide a comprehensible and substantive (i.e., scorable) reason for the stated preference, the following probe is asked.

2b. What do you think that the parent in this situation would be hoping to accomplish if he or she were to use the response that you believe to be the best way of handling the situation?

   Follow-up probes:
   (i) What would the parent in this situation be trying to accomplish?
   (ii) What do you think the parent would be trying to achieve in this situation?
   (iii) What would be the parent's primary goal in this situation?
   (iv) What would be the main objective in this situation?
   (v) What do you think that the parent would be aiming at?

If the parent does not give a satisfactory answer, the interviewer should try as many, and only as many, of the follow-up probes under

Question 2b as are necessary to elicit a scorable answer before proceeding to Predicted I Communication Strategies.

Predicted I Communication Strategies

1. If this were a real situation and you were the parent in it, how do you think you would probably respond?

   Alternate: How do you think you would probably respond if this were a real situation involving you as the parent?

Regardless of whether the parent indicates that s/he would handle the situation in the same or in a different manner than was previously stated as a preferred response, rationales should be elicited with the following probes.

2a. Why do you think you would respond in that way?

   Alternate: (i) Why would you (repeat the strategy just started by the parent)?

   (ii) Why do you think you would handle it that way?

If the parent does not provide a substantive rationale for the strategy, proceed to Question 2b.

2b. What would you hope to accomplish by (repeat the parent's strategy)?

   Follow-up probes: (i) What would you be trying to achieve?

   (ii) What would be your primary goal in this situation?

   (iii) What would be your objective?

   (iv) What would you be aiming at?

The interviewer should try only as many of the follow-up probes as are necessary to elicit a scorable answer before proceeding to Predicted II Communication Strategies.

Predicted II Communication Strategies

1. If you were the parent in a real situation just like this one, and you tried...(indicate the response that the parent has just stated he would do), but the child still did not respond as you hoped (he or she) would, what then might you try next?

   Alternate: (i) What might you try if (repeat the problem presented in the hypothetical situation) did not occur?

   (ii) And if that (previous strategy) didn't work, what would you try next?

2. Why would you respond that way at this point in the situation?

   Alternate: Why do you think you'd do that?

If the parent does not respond in a scorable fashion, probes listed under Predicted I Communication Strategies (2b) should be administered as necessary.

Response Units: A response unit is a meaningful unit of analysis designated within the total parental verbal response for each of the 12 Communication Strategy Interview items. The first response unit is the parent's verbal statement in answer to he questions and probes concerning the response that the parent believes to be best for the hypothetical situation and his or her associated reasons for this choice (Preferred strategy). The second response unit is the parent's verbal statement in answer to the questions and probes concerning the response he or she would probably make in a real situation of the same nature, taken together with its accompanying justifications (Predicted I strategy). The third response unit is the parent's verbal statement in answer to the questions and probes concerning the probably contingent response assuming that the parent's initial response has not been successful (Predicted II strategy).

The coder is to listen to the entire response unit before coding; however, the coder may relisten to the response unit either in part or in its entirety as often as is necessary. It is important in scoring that the coder disregard any extraneous material not directly elicited by the interviewer's questioning but rather introduced by the subject as a personal digression. The coder is to further disregard any information elicited by improper interview procedures, e.g., leading questions, questions beyond those prescribed as paraphrasing the formal interview schedule questions and probes, etc.

Administration Procedures: The Communication Strategy Interview is administered upon completion of the questionnaire. The parent is asked to respond to a number of questions that would clarify his reasons for preferring certain types of communication strategies. The parent is first told that the options included in the questionnaire do not necessarily represent every way of responding to a situation. The interviewer instructs the parent that during the interview it is permissible to designate responses that may not have been presented in the questionnaire, if he or she feels there is a substitute that is better or more appropriate. Caution is given to the fact that although the parent has the option to insert a new response, it is not a requirement of the task. The interviewer then proceeds with the structure outlined above.

Coding System for Communication Strategies: All preferred and predicted communication strategy responses are identified in terms of the response category or categories indicated. There are 8 general response categories which represent different ways of communicating with a young child in different situations:

Distancing: This response category covers responses by the parent which attempt to influence the child through the use of a procedure intended to induce the child's active verbal participation centered on a problem defined in the situation. This type of communication places a mental demand on the child and functions as an inquiry directed at the child from the parent. It may take the form of an interrogative sentence ("How will your friend feel without anything to play with?") or a declarative sentence ("Tell me how you think your friend feels.").

Examples: "What do you think is right?"

"Tell me what might happen to the toy if you play with it very rough?"

"Can we build the tower taller if we make the bottom wider?"

Rational Authoritative: This response category includes communication strategies which provide the child with a statement of fact, rule, or information, and which are accompanied by a supporting elaborative explanation that is an appeal to reason or to social norms.

Examples: "I'd tell the child not to throw blocks because the blocks flying through the air could hit something and break it."

"Metal spoons are too heavy to float."

"I'd tell him not to eat candy now because there are rules about eating habits everyone should follow."

Direct Authoritative: This category is used for a parental response that is directed toward changing the child's behavior by providing a statement of fact or rule without any further elaboration or explanation.

Examples: "The metal spoon will not float in water."

"You must stop throwing the blocks."

Diversion: This category refers to responses that the parent might prefer to try so as to involve the child in some behavior or activity other than the one that is specified in the hypothetical situation. The parent attempts to alter the child's behavior by proposing a substitute activity which is not explicitly relevant to the problem at hand.

Examples: "Why don't you play with one of your favority old toys instead of that new one?"

"Since you're having trouble with the blocks, why don't you play with another toy instead?"

Activity: This category includes all responses that indicate parent-child participation, including demonstrations and/or experiments that the parent performs with or for the child.

Examples: "I would sit on the floor and help her build the building with the blocks."

"I would bring in lots of different objects to show him that things made of different materials either sink or float."

Authoritarian Behavior: This response category refers to parental choices of means of responding to the child in the situation that includes physical manipulation of the child and/or his surroundings, or to the use of verbal threat or abuse.

Examples: "I'd probably spank him then."

"He'd better listen then and he'd know it."

Passivity: This response category includes parental responses which indicate that the parent will not intervene in any systematic way to modify the situation. Concessions to the child's desires are included in this category.

Examples: "It's her choice to play with the children or not--if she chooses not to, I'd just let her be."

"I'd give him a piece of candy. He'll want to eat it no matter what I say to him."

Other: This category is included to allow for the possible introduction of a childrearing goal that is not consistent with any of the previous categories.

Combinations of Strategies

Cases might arise in which the parent refers to more than one response category in a given response unit. If the parent states that one response would precede the other, the first strategy discussed is coded for that response unit. If the parent indicates that two or more categories are considered jointly and not separately, the following rules are applied for coding purposes.

(1) If "distancing" occurs concurrently with "rational authoritative," "direct authoritative," or "activity" strategies, code as "distancing."

(2) If "rational authoritative" and "direct authoritative" strategies occur concurrently, code as "rational authoritative."

(3) If "activity" strategies occur in conjunction with "rational authoritative" or "direct authoritative" strategies, code as "activity."

(4) "Authoritarian behavior" strategies subsume all strategies except "passivity" strategies. That is, if "authoritarian behavior" occurs with "distancing," "rational authoritative," "direct authoritative," "diversion," "activity" or "other," code as "authoritarian behavior."

(5) "Diversion" strategies subsume all strategies except "passivity" and "authoritarian behavior" strategies. That is, if "distancing," "rational authoritative," "direct authoritative," "activity" or "other" occur in conjunction with "diversion," code as "diversion."

(6) "Passivity" strategies subsume all other strategies. That is, if any other strategy occurs concurrently with "passivity," code as "passivity."

(7) "Other" is subsumed by any communication strategy it occurs with. That is, if any codable strategy occurs in conjunction with a strategy that is encompassed only by the "Other" category, refer only to the strategies that are consistent with defined coding categories.

(8) The number of categorically different strategies that the parent proposes in a concurrent manner should be noted on the code sheet.

Coding system for communication strategy rationales: Parental rationales associated with the three communication strategies given for each interview then are coded according to four criteria: Childrearing goals, temporal focus, childrearing orientation, and situational constraints. The scoring procedures for each of these criteria are presented below.

Childrearing Goals

Types of objectives parents express as rationales for the communication strategies they propose are coded according to six categories.

Parents may refer to only one goal or they may refer to a number of goals simultaneously when discussing a particular communication strategy. If a parent refers to more than one goal, each goal is coded. These goals that are given little emphases (i.e., expressed with lesser frequency or less intensity relative to other goals within the response unit) are coded by assigning a score of 1. Goals which are expressed as primary objectives receive a score of 2. Whenever a parent refers to only one goal, that goal is assigned a score of 2. All goals that are not mentioned by the parent are assigned a score of 0.

The categories of parental childrearing goals reflect different emphases on aspects of the child and/or the child's environment. These six categories are termed cognitive, personal-social, physical, child-management, assessment, and nonchild goals. Each category will be defined below.

(1) Cognitive: A cognitive childrearing goal is defined as a parental concern for the child's intellectual capabilities and/or functioning. Parental goals that imply an intellectual objective for the child are coded within this category. The substance of a cognitive goal may include concept formation, concept application or cognitive processes.

Examples: "He should learn that the boat will float and the spoon should sink."

"I want her to understand that heavy things will sink and light ones float."

"I would want him to think about what could happen at the park if he were alone."

"It's important to always encourage a child to make decisions so she can become a thinking adult."

(2) Personal-Social: Personal-social goals are defined as parental concerns for the child's emotional-dispositional state and/or development, as well as the child's interpersonal abilities. Parental objectives that focus on how the child feels, on some dispositional characteristic of the child or on the nature of the child's relationships and/or interactions with others are personal-social goals.

Examples: "I'd like her to grow to be a happy person."

"As soon as he got upset with the building I would help him so he wouldn't get frustrated."

"I'd take him to the swings and try to get him to talk to the other kids because I want him to play with other kids."

"I want him to be confident."

(3) Physical: The parent expresses concern for the child's biological state and/or physical safety. Concerns for the child's health, physical needs and physical skills are included.

Examples: "I want him to eat his supper because it's better for him than candy."

"She'll become better at fitting the logs together the more she plays with them."

"I don't want him to get hurt by flying blocks."

(4) Child Management: The parent focuses on instilling positively valued behaviors and/or prohibiting negatively valued behaviors in the child. The parent may emphasize socially approved behaviors or prosocial prescriptions for behavior or may focus on controlling antisocial or non-accepted modes of behavior.

Examples: "He has to stop pestering me when I'm busy."

"I want her to be ready on time."

"I don't want him to hurt someone by throwing the blocks all over the room."

"I want him to be careful about other people's property."

(5) Assessment: The parent focuses on gaining a greater understanding of the child's internal state/functioning or overt behavior. The parent may simply desire to know his child more fully, or the parent may

wish to have additional knowledge through which he can guide his own behavior as it is directed toward the child.

Examples: "I need to know why he thinks the cartoons are alive before I can deal with his misconception."

"He might be afraid of a dog or a child in the park so you have to ask him."

"I'd want to know if she understands why rules exist."

(6) Nonchild: The parent focuses on parental childrearing considerations that are not related to the development or socialization of the child. The parent's behavior as an end-product may be a goal, or the parent may focus on issues of expediency.

Examples: "I'd dress her myself. That would be the fastest way to get to the movies on time."

"I have to finish making supper."

"I've tried putting the candy on top of the refrigerator and it works."

Temporal Focus

The second criterion applied to parental rationales concerns their temporal focus. A distinction is made between parental statements that reflect an active temporal perspective and those reflecting a passive perspective. An active perspective involves placing a demand on the child to actively represent a state or event that is not directly observed by the child. The parent's goals may include either (1) a demand on the child to make a connection between different events and/or points in time, or (2) a demand on the child to represent a present, past or future state that is not evident to the child or is a nonpresent state. By definition, an active temporal perspective implies a distancing effect on the child. The child is required to go beyond the visible concrete situation and either reconstruct the past, represent the present, anticipate the future or relate these points in time in a psychologically relevant manner.

A passive temporal mode places no demand on the child. The parent may refer to events and/or states in time (present, past, future) or to the relation between them, but the parent is not concerned with the child making connections between these temporal points. Within the passive mode, the parent himself may represent present and nonpresent states or may represent states along a temporal continuum. For example, the parent may suggest that the present state will benefit the child in the future. The parent's temporal perspective is passive in this instance. It is the parent who is thinking along temporal dimensions, not the child.

The active versus passive dimension of the parent's temporal perspective is indicated for each communication strategy goal.

Childrearing Orientation

The third criterion applied to each parental rationale concerns childrearing orientation. The inclusion of this criterion is based on the desire to investigate the relation between communication strategies and the extent to which the parent tries to be sensitive to the child's state. Since effective cognitive stimulation requires a match between environmental demands and the child's level of comprehension, childrearing orientation may be helpful in determining which parents are likely to be effective distancing agents. On the basis of inspection of the data, four possible parental perspectives have been identified: (1) Parent-centered, (2) child-centered, (3) parent role-centered, and (4) other-centered. The definitions and scoring procedure for these orientations are presented below.

(1) Parent-centered: The parent views the situation primarily from his own perspective and places emphasis on his own interests or needs. The personal priorities of the parent-as-self are considered before those of the child.

Examples: "I would play with him so he would leave me alone and I could get dinner ready."

"I want him to go to the zoo so I can be proud of him."

"I'd give her something else to do so I could have some peace and quiet."

(2) Child-centered: The parent's primary concern is in fulfilling the needs and wants of the child. The parent attempts to take the child's perspective and acts in accord with his hypotheses about the child's thinking, feeling or needs.

Examples: "I'd play with her because she must be feeling lonely to keep asking me like that."

"I would let him go if he wanted to, but I don't think I should push him if he doesn't want to go to the zoo."

"I think the child's needs should come first in the family."

(3) Parent role-centered: The parent's perspective is one of himself as the primary teacher, socializer and emotional supporter of the child. The parent is trying to fulfill expectations of parental duties and responsibilities in childrearing.

Examples: "There are certain rules a parent must lay down so the child knows what to expect."

"It's important for parents to take the opportunity to teach their child whenever the opportunity arises."

"A parent has to make sure a child eats what's good for him."

(4) Other-centered: The parent takes the point of view of a third person or of society at large instead of or in addition to his own and/or the child's perspectives.

Examples: "I don't want his friend to feel left out and sad without anything to play with."

"I wouldn't want to keep her friend and her friend's family waiting while she makes up her mind about the zoo."

"Other people aren't going to like that kind of behavior."

Situational Constraints

The fourth and final criterion applied to parental rationales concerns situational constraints. This category is used to score the inclusion or emphasis of qualifications indicated by the parent which may affect or temper the parent's response to the situation. Situational constraints may be parent-based, child-based, or setting-based.

(1) Parent-Based: This code refers to specific parent-self referents which may qualify the response to the situation; i.e., the state of the parent. A distinction is to be drawn between statements scorable as situational constraints as illustrated in the examples below and more enduring characteristics of the parent which would not be scored as such (e.g., "...since I'm generally short-tempered, I would scold him," etc...).

Examples: "If I happened to be very tired, I would give her a few candies before dinner."

"If I were happy about his behavior on that day, I would give him more attention."

(2) Child-Based: This code refers to specific child referents which may qualify the parent's response to the situation, i.e., the state of the child. Again, more enduring characteristics of the child (e.g., that he or she is only 4 years old) are not scored as child-based situational constraints.

Examples: "Maybe she's just in a cranky mood and isn't able to listen to an explanation."

"He might not want to play with the other children because he had a fight with one of them."

(3) Setting-Based: This code refers to those circumstances stemming from the setting which may qualify the parent's response to the physical situation (i.e., external factors).

Examples: "Since we live on a busy street, I have to put my foot down firmly."

"If it's very close to the time the show starts, then she just has to get dressed."

(4) Other-Based: This code refers to the parent's consideration of third persons that may influence or qualify the parent's response to the situation.

Examples: "If his friend didn't care about playing with the Legos, I wouldn't force him to share them."

"If her friend's family is waiting for her, I would tell her to make up her mind now."

The twelve hypothetical situations and the response options that accompany them are presented below.

Item 1

Billy was playing with his Lincoln Logs. A couple of logs wouldn't fit together and Billy started throwing them about the room. Father said:

_____ 1. Stop throwing your blocks. It is not safe to throw blocks.

_____ 2. What could happen if you throw blocks around the room?

_____ 3. Since you are having trouble with your blocks, why don't you play with another toy instead?

_____ 4. Please stop throwing your blocks.

Item 2

Karen and her father had earlier planned to go to the movies. It was getting late and Karen was still not ready. Father knew that Karen should be getting dressed now but Karen kept on playing. Father said:

_____ 1. Let's find the new shoes that you wanted to wear today.

_____ 2. You aren't dressed yet. You must get dressed now.

_____ 3. You have to get dressed so we can get to the movies on time.

_____ 4. Tell me why you should get dressed now.

Item 3

One day Jimmy's friend was invited over to play. Jimmy had taken out only his Lego building set to play with in the living room. He wasn't sharing any of the pieces in the set with his friend. Father said:

_____ 1. Why don't you get one of your other toys to share with your friend.

_____ 2. How will your friend feel without having anything to play with?

_____ 3. You have to share your toy with your friend. Then you will both have something to play with.

_____ 4. You have to share your toy with your friend when he comes over to play.

Item 4

David kept asking his mother to play with him. Mother told David that she was very busy right now. But David still kept asking her to play. Mother said:

_____ 1. Please stop asking me to play with you now.
_____ 2. Why do you think I cannot play with you right now?
_____ 3. While I'm finishing my work, why don't you do a puzzle?
_____ 4. Please stop asking me to play with you, I am busy with my work now.

Item 5

At Christmas time Bobby and his mother were in the living room. Bobby saw a reflection of their Christmas tree in the window and told Mother that they had another Christmas tree outside. Mother said:

_____ 1. That is a copy of our Christmas tree shining in the window glass.
_____ 2. That is our own Christmas tree you see in the window glass. It's just like when you see yourself in the mirror.
_____ 3. If you stood in front of the tree, what would you see out the window?
_____ 4. Yes, I see the tree in the window glass. But for now let's decorate our tree in here.

Item 6

Father was giving Eric a bath. Eric was playing with his cereal bowl and some other things in the tub. Eric wanted to know if his cereal spoon would float like his bowl. Father said:

_____ 1. The spoon cannot float. It is metal and too heavy to float.

_____ 2. I don't have your spoon here. Let's play with the toys that are here.

_____ 3. What would happen if we put the spoon in the water?

_____ 4. Your spoon will not float. It will sink to the bottom.

Item 7

Stephen came home with some candy from a birthday party. He wanted to eat the candy, but Mother wanted him to wait until after supper. She said:

_____ 1. You can't eat the candy until after supper.

_____ 2. Why don't you save your candy until after supper. You can go and play on your swing set until suppertime.

_____ 3. What could happen at suppertime if you eat your candy now?

_____ 4. You can't eat the candy now. You will be too full to eat all of your supper.

Item 8

Mother took Patty to the playground where she usually liked to play but Patty just stood watching the other children. Since Mother wanted her to play with the other children, she said:

_____ 1. You should play in the playground so that you can have fun with the other children.

_____ 2. Tell me why it might be fun to play with the other children.

_____ 3. You should play in the playground with the other children.

_____ 4. Do you want to leave now? You can call a friend to come and play with you at home.

Item 9

One day Father was watching Sandy build with blocks. Sandy was trying to make a tall building by stacking the blocks one on top of the other, but the building kept falling down. Sandy asked her father why the building kept falling down. Father said:

_____ 1. You cannot stack so many blocks on top of one another when you make a building.

_____ 2. Maybe you would like to build something lower with your blocks instead of such a tall building.

_____ 3. When you stack your blocks too high, the top of the building may be shaky and fall down.

_____ 4. How about telling me why you think the building keeps falling down.

Item 10

Paula had been watching cartoons on television. She told her mother that cartoon characters were alive. Mother said:

_____ 1. Cartoon characters are not alive. They are drawn like the pictures in your book.

_____ 2. Next time your cartoons are on we can see if they're alive. For now why don't you color in a coloring book?

_____ 3. The cartoon characters that you see on television are not alive.

_____ 4. How do you think cartoon characters are like pictures drawn in your books?

Item 11

Mary knew she was not supposed to go to the park by herself. One day Mother saw her leaving the yard, heading in the direction of the park. Mother called her back and said:

_____ 1. Why do you think it is not safe to go to the park by yourself?

_____ 2. You cannot go play in the park all by yourself.

_____ 3. You cannot go to play in the park because if you needed help you would be alone.

_____ 4. You cannot go to the park but you can go next door and play with your friend.

Item 12

Betty and her father were invited to go to the zoo with her best friend Ann and Ann's family. Betty's father couldn't go but he thought that Betty might have fun if she went anyway. Betty couldn't make up her mind so Father said:

_____ 1. How would you feel if you went to the zoo today with Ann?

_____ 2. You should go to the zoo with Ann even though I cannot go.

_____ 3. You should go to the zoo without me because you'll have fun at the zoo with Ann.

_____ 4. Why don't you look at the pictures of zoo animals in your book. We can go to the zoo some other time.

Scoring Key for Situation Types, Response Alternatives[a] and Types of "Distancing" for the Communication Preference Questionnaire

Item	Situation	Response Alternatives				Form of Inquiry
		1	2	3	4	
1.	F	B	A	D	C	A
2.	E	D	C	B	A	A
3.	D	D	A	B	C	a
4.	D	C	A	D	B	A
5.	B	C	A	A	D	A
6.	A	B	D	A	C	a
7.	E	C	D	A	B	a
8.	C	B	A	C	D	a
9.	A	C	D	B	A	A
10.	B	B	D	C	A	a
11.	F	A	C	B	D	a
12.	C	A	C	B	D	A

Situation Type

A. Teaching physical facts & principles: positive
B. Teaching physical facts & principles: negative
C. Promoting social skills & norms: positive
D. Promoting social skills & norms: negative
E. Behavior management: positive
F. Behavior management: negative

Response Alternatives

A. "Distancing"
B. "Rational authoritative"
C. "Direct authoritative"
D. "Diverting"

Form of Inquiry

A. Open: no suggestion
a. Open: suggestion or hint

A'. Closed: no suggestion
a'. Closed: suggestion

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[a] Presentation orders of situation types and response alternatives are by random selection.

Construction of the Child Interview

Content and administration. There are 22 sets of probes comprising the Construction of the Child Interview. The content of each set of construction probes stems from an issue raised in each of the hypothetical situations presented for the Communication Strategy Questionnaire and Interview. Each set of probes consists of initial questions aimed at establishing the parent's view of whether or not the child has attained the concept or ability at the age in question. Follow-up questions aimed at eliciting the parent's beliefs about developmental processes that have or will lead to such an attainment are then administered (e.g., "Does a four-year-old understand time?" and "How does a child come to understand time?")

Appropriate sets of probes are administered separately for each hypothetical situation immediately after communication strategies have been discussed in full for that situation. After the parent responds to the construction probes, the next hypothetical situation is discussed for communication strategies and then for constructions of the child, and so on until all 12 situations have been completed. The 22 construction of the child probes are presented below, organized in terms of the appropriate hypothetical situation they follow.

Questionnaire Situation #1

Billy was playing with his Lincoln Logs. A couple of logs wouldn't fit together, and Billy started throwing them about the room.

Construction probes

Say to parent: These next few questions are about 4-year-olds* in general.

In answering them, think about all 4-year-olds and not just your child.

(a) Do 4-year-old children realize the consequences their own actions may have? For example, do 4-year-olds know that something could get broken if they throw things around?

(b) How does a child come to realize the consequences of his/her own behavior?

(This probe set is not numbered because it is not coded.)

Questionnaire Situation #2

Karen and her father had earlier planned to go to the movies. It was getting late and Karen was still not ready. Father knew that Karen should be getting dressed now but Karen kept on playing.

Construction probes

1. (a) Does a 4-year-old understand time?

    (If necessary the following probe may be used.)**

    Does a child know about an hour, tomorrow, a year?

    (b) How does a 4-year-old eventually come to understand about time?

2. (a) Do 4-year-olds plan what they want to do ahead of time?

    (If necessary the following probe may be used.)*

    For example, does a 4-year-old plan that "For now I'll watch TV and then I'm going to the movies."

    (b) How does a child become able to plan?

Questionnaire Situation #3

One day Jimmy's friend was invited over to play. Jimmy had taken out only his Lego building set to play with in the living room. He wasn't sharing any of the pieces in the set with his friend.

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*These probes focus on 4-year-olds. For use with parents of older children, simply substitute appropriate age group.

**These probes are to be used only if the parent requests clarification or indicates that they do not understand the original question.

Construction probes

3. (a) What makes two 4-year-olds friends?

   (b) What do you think "friendship" means to a 4-year-old?

   (c) How does a person get the idea of friendship that she/he has as an adult?

   (Alternate (c) Adults have certain ideas about friendship. How do they get these ideas?)

4. (a) Does a 4-year-old realize that someone else may be feeling differently than he/she does?

   (If necessary the following probe may be used.)*

   For example, that someone might feel sad while she/he is happy?

   (b) How do children come to realize that other people may feel something differently than they do?

Questionnaire Situation #4

David kept asking his mother to play with him. Mother told David that she was very busy right now. But David still kept asking her to play.

Construction probes

5. (a) Does a 4-year-old know how to take someone else's point of view?

   (b) How does a child become able to take another's point of view?

6. (a) Does the child understand that her/his parents have some duties and responsibilities that don't directly involve her/him?

   (If necessary, the following probe can be used.)*

   For example, does a child understand that you must go to work, do work around the house?

   (b) How does a child become able to understand this?

Questionnaire Situation #5

At Christmastime Bobby and his mother were in the living room. Bobby saw a reflection of their Christmas tree in the window and told mother that they had another Christmas tree outside.

Construction probes

7. (a) Is it important to correct misunderstnadings or misconceptions a child may have about the real world?
   (b) Where do these misconceptions come from?
   (c) Why do such ideas eventually change?

Questionnaire Situation #6

Father was giving Eric a bath. Eric was playing with his cereal bowl and some other things in the tub. Eric wanted to know if his cereal spoon would float like his bowl.

Construction probes

8. How do you think the child comes to know which things will float and which ones won't float?
9. How does a child come to know why some things float and others do not?

Questionnaire Situation #7

Stephen came home with some candy from a birthday party. He wanted to eat the candy, but Mother wanted him to wait until after supper.

Construction probes

10. (a) Does a 4-year-old understand rules?
    (b) How does a 4-year-old understand rules? That is, why does a child follow certain rules?

11. How does a person get the rules that she/he follows as an adult?

    (If necessary the following probe may be used.)*

    How does the child eventually get rules of his/her own, that he/she follows on his/her own?

12. (a) Can a 4-year-old child delay something that he/she wants to do now until a more appropriate or better time?

    (b) What makes a child able to do this eventually?

Questionnaire Situation #8

Mother took Patty to the playground where she usually liked to play, but Patty just stood watching the other children. Mother wanted her to play with the other children.

Construction probes

13. (a) What purpose does playing with others serve?

    (b) How does playing with others accomplish this?

14. (a) Is it important for a child to be socially outgoing?

    (b) Why/why not?

15. (a) Is it ever necessary to give a child a gentle push in a certain direction?

    (b) Why/why not?

Questionnaire Situation #9

One day father was watching Sandy build with blocks. Sandy was trying to make a tall building by stacking the blocks on top of one another, but the building kept falling down. Sandy asked her father why the building kept falling down.

Construction probes

16. What role do you think frustration may play in learning?

    (If necessary the following probe may be used.)*

    Is it ever OK to allow a child to become frustrated?

    Why?

Questionnaire Situation #10

Paula had been watching cartoons on television. She told her mother that cartoon characters were alive.

Construction probes

17. (a) Do you think children ever think that inanimate objects like a rock or a tree have feelings and thoughts?

    (b) Where do you think these ideas come from? or Why doesn't a child ever have such ideas?

    (c) (If appropriate) Why do ideas like this change?

18. What makes a child come to realize some things are alive and others are not alive?

Questionnaire Situation #11

Mary knew she was not supposed to go to the park by herself. One day mother saw her leaving the yard, heading in the direction of the park.

Construction probes

19. (a) Is it all right to allow a child to be independent instead of following a rule he/she usually follows?

    (b) Why/why not?

20. (a) Does a 4-year-old know when to be independent and when to follow a rule?

    (b) How does a child come to know when to follow rules and when to be independent?

Questionnaire Situation #12

Betty and her father were invited to go to the zoo with her best friend Ann and Ann's family. Betty's father couldn't go but he thought Betty would have fun if she went anyway. Betty couldn't make up her mind.

Construction probes

21. (a) Should children make their own decisions?

    (b) Why/why not?

    (c) On what do they base their decisions?

        (If necessary the following probe may be used.)*

        For example, how do they work out problems when they want to do things at the same time?

22. What makes a child act independently, or on his/her own?

Administration of these probes should follow the order presented above in all cases except the following: If the parent says the child "learns," "sees" or that changes are due to "socialization," "experience" or "individual differences" the interviewer must probe for an explicit process. The following probes are acceptable.

"Can you tell me what you mean by __________?"

"How does __________accomplish this?"

"Can you tell me more about __________?"

Coding: The Construction Interview coding is separately from the Communication Strategy Interview. The coder first listens to the entire protocol for a particular set of construction probes. The coder then listens again to the parent's statements in response to each construction probe. The parent's verbalizations are then coded in two ways. First, the coder rates the parents constructs on a four point Likert-type scale that ranges from (1) Knowledge exists external to the child; s/he is a passive recipient of information/knowledge to (4) Knowledge is a result of active processing on the child's part; mechanisms responsible for learning and development are internal to the child.

Second, the parents verbalizations are scored for frequency and intensity of reference to each of the constructs of child states and processes. Any construct that is not referred to is assigned a score of 0. Those constructs that are included, but with less frequency or intensity than others, receive a score of 1. The primary or dominant constructs expressed in parental statements are scored with the numeral 2. Whenever a parent refers to only one construct, that construct receives a score of 2. The coder may relisten to the parent's statements either in part or its entirety as often as necessary. The constructs used for this portion of coding are defined below.

After the 22 sets of probes have been coded in both manners, the coder sums the total number of constructs scored across all probes. In addition, the confidence the parent expressed in his/her beliefs about developmental processes are indicated on a Likert-type scale ranging from very uncertain (1) to very certain (4).

1. Innate factors:

The parent refers to innate or inborn characteristics or to a gradual or spontaneous emergence of a characteristic that comes about through natural growth rather than through any particular activity on the child's part or special environmental contingency. The implication may either be that some characteristic is biologically and automatically transmitted to children or that some characteristic is lacking due to inheritance. This construct is also applied whenever the parent refers to age as a developmental variable without referencing some other process that parallels maturations.

Examples: "All children are unique. They are individuals from the moment they're born."

"Children are either shy or they are outgoing by nature."

"Some children are simply born smarter than others."

"Children don't understand the concept of time until they are older."

(with no reference to any process on the child's past)

"Children should be able to share by the time they are four-years-old.

2. Readiness:

The parent refers to a necessary state or level of mental or physical preparedness before the child is capable of some experience, knowledge, or action. The notion of critical periods and the notion of a "match" between the environment and the state of the child are both included under a "readiness construct." The state of readiness may be induced in the child by the environment or it may be the result of processes internal to the child. A state of readiness may be assumed to exist by the parent, or the parent may say this state has not yet been attained.

Examples: "The child will learn this concept when he is ready."

"It isn't important for a four-year-old to be outgoing. He'll play with the other children when he is ready."

"Children should work at the things that they can handle successfully."

"Four-year-olds aren't ready to handle exceptions to rules yet."

"If he doesn't learn it now, he'll never learn it."

3. Empathy/contagion/projection:

The parent feels that children imaginatively fuse their own inner state with that of another person so that both experience the same emotions or ideas. Children attribute their own feelings or needs to other people and/or objects in the environment.

Examples: "If a four-year-old likes another child, he assumes the other child likes him in the same way."

"When he feels sad, he thinks his toys feel just the way he does."

"As soon as he sees the other children having fun, he will enjoy himself too."

"All a four-year-old has to do is see someone else crying and he'll start crying himself."

4. **Negative feedback:**

The parent refers to an unpleasant state produced in the child which serves as a motivation for the child's behavior or as an inhibitor for the child's behavior. Negative reinforcement or punishment may or may not be construed as a means through which the child receives feedback about his behavior.

Examples: "Children obey rules out of fear of being punished."
"Children learn to take other people's point of view because when they don't it leads to negative consequences."

5. Dependency:

The parent views the child as reliant on other persons for support, guidance, discipline, etc. Dependency may be seen as a need-state, a personality trait or an inadequancy. The parent may view dependency either positively, e.g., an emotional attachment akin to love and trust, or negatively, e.g., a lack of self-reliance. Whenever a parent refers to progressive independence that occurs with development or parental practices, it may be assumed that the parent feels children are basically dependent creatures.

Examples: "Children rely on adults to help them make decisions."
"Children must be prodded to become independent."
"Children think they can't enjoy themselves unless their parents are with them."

6. Rigidity:

The parent thinks that the child's thinking and/or behavior is stiffly set and unyielding. This rigidity aspect may be seen as temporary, characterizing only certain periods of development, or it may be seen as a rather enduring characteristic of childhood. Whenever a parent refers to increasing flexibility in the child as a result of development or parental practices, it may be assumed that the parent views children as relatively rigid in thinking, affect or behavior. References to egocentrism (child's inability to take another person's point of view) are included under the rigidity construct.

Examples: "Children don't like changes in their routines."

"Rules are seen as black and white by four-year-olds."

"Children will try the same thing over and over even though it doesn't work."

"Young children don't really know what 'alive' means. They even think that when they're awake, the rest of the world doesn't go on without them."

"Children of four years can't understand anyone else's point of view. All they know is what's in their own head, not that someone else has responsibilities that come first."

7. Impulsivity:

The parent refers to a child's tendency to act on sudden spontaneous inclinations or incitement to some usually unpremeditated action. Impulsivity is not to be confused with independence. Impulsivity implies a lack of control over one's own behavior, whereas independence implies some factor of control over one's own activities (see "Independence").

Examples: "Four-year-olds make decisions purely on the basis of what they feel like doing the most at that instant."

"Rules are important because they help keep the child from doing whatever he wants immediately."

"Children don't think (plan) about what they say (do). They just do whatever pops into their heads."

8. Conflict:

The parent feels that the child becomes involved in internal struggles that result from incompatible or opposing needs, drives, wishes or incompatibility between external and internal demands. Conflict is a parental construct whenever the child is viewed as if an inner state of confusion or disequilibrium between internal and external states exists regardless of whether the child is seen as capable or resolving the conflict or not.

Examples: "The child doesn't know what he wants to do. He's pulled in two directions at once."

"Young children want what they want immediately but the world doesn't work that way. That causes problems for the child."

9. Logic/Reasoning:

The parent refers to some invention, discovery, creation, formulation or conclusion arrived at through a logical thinking process. The parent views the child as capable of logical thinking.

Examples: "Children figure things out on their own."

"Four-year-olds make decisions by weighing all the alternatives."

10. Structure of Environment:

The parent refers to an organization interest in circumstances, objects, persons and conditions that act upon and influence/determine the life of the child. It includes the process of forming mental connections or bonds between sensations, ideas, memories or behaviors by virtue of the fact that the events occur together either once or consistently over time.

Examples: "He knows from the expression on my face that I'm mad because he's seen that look before when I've yelled at him."

"Going to bed at night and getting up in the morning helps the child to come to understand about time."

"A stimulating environment is important for the child's intelligence/motivation/development, etc."

11. Accumulation:

An increase or growth in knowledge or behavioral, social and affective skills that occurs by addition, especially when continuous or repeated. The parent may refer to the child's repeated action/repeated observation or systematic exercise that is necessary for proficiency.

Examples: "If children do it over and over, eventually they will learn how to do it right."

"If the child hears the rule often enough, then eventually it will sink in."

"Each time a child plays with a toy in the water, he learns whether it can float or not. All these experiences with things that float build up his ideas of which will float."

"The more kids a child plays with, the more ideas he can get about what other people are like."

12. Creativity/Imagination:

The parent refers to children's ability to form a notion that is new or original for the child, or has never before been wholly perceived in reality (not merely a misperception, or pretend).

Examples: "Children come up with some wild and amazing ideas about the way things work."

"A four-year-old child imagines all sorts of crazy things that aren't true.

"Four-year-olds think anything is possible. They haven't learned about the real world yet so their imagination runs wild."

13. Cognitive Transformations:

The parent refers to the child's use of a process of drawing the essential underlying principles from a particular object or situation and reflecting on that principle. The child actively processes and transforms information so that the child's ideas/concepts are seen as a result of the child's own thinking actions. Reference to reintegration of structures of thought or ideas into a logical and functioning whole are coded according to this construct.

Examples: "Children have a lot of experiences with things that float. At some point everything clicks in the child's mind and he can understand why things float as well as predict which objects will and won't float."

"When the child really understands the rule, everything else will come together in his mind."

"Children understand why things float from figurin figuring out what the characteristics are of objects that do float versus those that sink."

"Children get their ideas about time by using their own thinking and imagination and changing these ideas as they have new experiences."

"Children don't really understand rules until they reach a point where they make up rules of their own that are necessary for themselves."

14. Self Regulation:

An internal governing and controlling process that produces systematic order and coordinated actions and behaviors; a process or mechanism through which a balanced state of equilibrium is achieved or maintained between the internal and external state of the child. The child is capable of governing or exercising control over his/her own actions.

Examples: "Parents don't have to push their children. A child will be motivated to seek those experiences that are necessary for him to learn."

"Eventually the child won't need to be told that he can't eat candy whenever he wants to because he'll be able to control his own behavior by himself."

"If a toy is just a little hard for a child it's good because the child will respond to the challenge and learn; but if it's too hard the child will be frustrated and give up."

15. Absorption:

The process of incorporating or taking in to an existent system without processing or transformating to a new or different form.

Examples: "When a child hears a rule, the rule will sink in."

"If a child plays with lots of things in the bath, they will know which things will float and which won't from their experiences with these things." (has not specified an internal process)

16. Modelling/Identification:

Imitation or patterning of oneself after another person. The child's tendency to become similar or to incorporate the traits of some person or group.

Examples: "If the parent is a good example for the child, the child will follow the rule, too."

"If parents seem to enjoy themselves and get along with their friends, their children will act like that with their own friends."

"Children do whatever their friends do."

"Children will take the same rules and values as their parents because they want to be like them."

17. Direct Instruction:

The act or process of conveying/giving the reason for or the cause of. A direct presentation of facts or information is involved. Processes internal to the child are de-emphasized.

Examples: "Children won't learn about floatation until they have science in school."
"If you explain the rule to the child, then he will understand why he can't go to the park himself."

18. Proximity/Exposure:

The parent refers to the presentation or existence of a social or physical object or event in the presence of the child.

Examples: "Children who are around lots of other children their own age make friends easily."
"Seeing things in the bathtub or going to the ocean give children the experience of seeing which things float and which don't."

19. Observation/Perception:

The act of seeing and/or noting an occurrence and making an inference or judgment from what one has seen.

Examples: "Children see their parents go to work so they accept the fact that they do have to do."
"A four-year-old can tell how others feel by watching their faces."

20. Stage:

A period or step in a progression, activity or development; a period of time or development that has one or several characteristics that make it distinctive; an ordering of successive parts (phases, sequences and stage of development are coded with this construct).

Examples: "The four-year-old can only understand which things will and won't float after he understands about weight. He has to know these things before he will reach an understanding of why things float."
"Children first understand rules only in terms of what they can and cannot do. On the basis of this, they come to understand the reasons behind the rules and then they come to understand why there are some exceptions to every rule.

21. Generalization:

The act or process whereby a response or idea obtains a general form that is applicable to many situations outside of the specific instance at hand.

Examples: "When a child plays well with another child, he will learn how to get along well with others."
"If a four-year-old has experience with wooden things floating in the bath, he will be able to apply this floating idea to other wooden things, too."

22. Infusion:

The act or process of injecting knowledge or behavioral, affective and social skills into the child from an external source. This construct implies a definite directionality, a thrust from the environment onto or into the child. Active processing on the part of the child may or may not be implied.

Examples: "In any dangerous situation, the reality must be impressed upon the child so that there can be no question about whether he will follow the rule or not."
"It's a parent's responsibility to correct a child's misunderstanding. Reality must be forced upon the child so that he will be able to deal with the world realistically all through his life."

23. Positive Feedback:

The parent refers to a positive state produced in the child or a positive external consequence of the child's behavior that may serve to motivate the child, provide information and feedback to the child or make a behavior more likely to reoccur. Positive reinforcement may involve administration of a physical reward to the child, approval following some expression or behavior, or feelings of success or self-approxal on the child's part following some behavior.

Examples: "Children obey rules because they want the approval of their parents."
"When a four-year-old tries something new and is successful, he will be more likely to explore new things in the future."

24. Positive Affect:

The parent refers to a pleasant state marked by freedom from anxiety that usually exists in the child. The child is seen as basically happy, satisfied, enjoying well-being and contentment. The parent may refer to occasions when this general positive state may be interrupted, but, in essence, the parent views the child as possessing a positive internal state.

Examples: "Frustration is bad because it disrupts the child's usual happy-go-lucky mood."

25. Negative Affect:

The parent refers to an unpleasant or anxious internal state in the child. The child is seen as basically fearful and/or unhappy. The parent may refer to efforts, environmental contingencies or processes internal to the child that temporarily alter this state, but implies that the child's state of being is marked by anxiety.

Examples: "Children are basically fearful. That's why they sometimes need to be prodded into a new situation."

"It's hard for a four-year-old to feel secure in approaching strangers because they are basically shy at this age."

26. Balance:

The parent refers to a process or state that tends toward harmonious resolution of affective, social or conceptual components within the child or between the child and his environment (both personal and nonpersonal). The child may seek or in some manner obtain interaction with those persons/

objects that will establish balance—or the child may modify some of his own characteristics or those of his environment in order to obtain or maintain a balance.

Examples: "A four-year old has friends who are similar to himself in likes and dislikes. This is why some four-year-olds get along so well together and others just don't mesh in the same way."

"For the child to know when to be independent and when to follow a rule, a balance has to be established between knowing what he wants to do, and what he has to do.

27. Experimentation:

The act or process through which the child applies some idea or behavior to a situation (physical or interpersonal), receives feedback from some object/person, and then modifies his behavior in some way, receives feedback and so on. The culmination of this process is or will be attainment of some concept or skill (behavioral or social).

Examples: "Play is important because it gives the child the opportunity to test out different rules and see what works with others and what doesn't."

"Children learn to persevere under frustration by experimenting with different solutions until they find one that works."

Effects of Family Configuration

Overview

After the communication strategy and the construction of the child probes have been administered for all 12 interview situations dealing with four year olds, the parent is told that discussion will now focus on other children in the family. The format of this portion of the interview session varies with the actual configuration of the family. For families in which there is a sibling older than the preschool child, interview probles focus on eliciting parent's reports of beliefs and practices at the time when the older sibling was four years old. Parents of preschoolers who are only or oldest children in the family are asked to predict their beliefs and communication strategies at a time when younger (or as yet unborn) second-born siblings would reach the age of four. Thus, parents of second-born preschool-aged children are asked to provide retrospective reports of beliefs and practices relevant to the firstborn child when (s)he was four years old, and parents of firstborn preschool-aged children are required to anticipate future beliefs and strategies with regard to children of subsequent ordinal positions reaching the age of four years.

Communication Beliefs

Content and administration: Probes designed to elicit parents' predictions of communication strategies and their construction of the child are administered relative to the "other" sibling. First, one of the CBQI situations previously discussed in relation to the target preschool child is presented again. Parents are asked how they think they would (have) respond(ed) initially if the "other" child was four years old and involved in such a situation. Next, parents are asked to describe their subsequent response if that initial strategy failed.

Thus, the format of these probes parallels that used in the Communication Strategy Interview with regard to the target child. Three of the original 12 situations are discussed in this manner, one representing each situation type (physical facts and principles, social skills and interactions, management of overt behavior). Interview probes for communication strategies predicted for the "other" sibling are presented separately for multiple- and single-child families below.

A. Multiple child family

(i) How do you think you would have handled the situation (#2) where the child was not getting dressed for the movies on time for (name of older sibling) when (s)he was four years old?

(ii) And if that didn't work, what would you be likely to try next with (name of older sibling)?

The same two probes are then administered for Situation #3 (not sharing when friend is over to play) and for Situation #5 (thinking there is another Christmas tree outside).

B. Single child family

(i) What if you had a second child and (name of only child) was about 8 and your new child were four years old. How do you think you would handle this situation (first #2, then #3, then #5) with your new four year old?

(ii) And if that didn't work, what would you be likely to try next with your new child?

After the three situations have been discussed in relation to the "other" child, the parent is reminded of the Construction of the Child interview probes. The interviewer asks the parent if his(her) ideas about such topics has (or might) remained constant or changed as a result of experience with the child(ren) in the family. Parents are asked to discuss why and how such ideas have/have not changed.

First, the interviewer reminds the parent of the issues that were previously discussed. For example, "Throughout the interview, we talked about how children think about things like time, friendship, rules, and so on." The interviewer than addresses issues of constancy/change. Specific probes for this portion of the interview are presented separately for multiple- and single-child families below.

A. Multiple child family

(i) Do you think your ideas about how four-year-olds think about these things has been affected by the fact that you had (name of oldest) and (name of middle child) instead of only one child?

(ii) Why do you think your ideas have changed/remained pretty much the same?

(iii) When (name of youngest) is four years old, do you think your ideas will be pretty much the same as they are now, or would you expect them to differ in any way? (Why?)

B. Single child family

(i) What if you had another child in the near future. When (s)he is four years old, do you think your ideas about things would be pretty much the same as they are now, or would they differ in any way?

(ii) Why do you think your ideas will be different/stay pretty much the same?

Coding procedures: Predicted communication strategies generated by parents relative to the "other" child are identified in terms of the 10 response categories used to code parents' predictions to the original 12 CBQI situations involving four-year-olds (see pp. 15-19). In addition, consistency and change in parental predictions across target and "other" children is noted. If the parent generates a strategy that belongs to the same response category as the strategy predicted for the target child, a notation that the two strategies are the same is made in the space provided and the response category is recorded. If the parent states that the same strategy would be used with the "other" child and does not verbalize that strategy, the strategy is coded as "same" and the response category coded for the probe relative to the target child is entered as the predicted strategy for the "other" child as well as the target child. As a general rule, then, parental predictions are recorded as the same for both children when (1) the parent's verbalization is coded into the same response category for probes dealing with both children, and when (2) the parent merely states that the same strategy would be used for both children with no further elaboration.

The strategy predicted by the parent for the "other" child is coded as different from the strategy predicted for the target child when the parent's verbalization is coded into a different response category. If the parent states that (s)he would use the same strategy as was predicted for the target child, but then expands upon this or gives qualifications, the strategy coded should be based on the response category that encompasses a combination of the original strategy and these added verbalizations.

Examples:

SAME (1) For the target child, the parent's predicted communication strategy was "I would tell her to get dressed or else we would be late." For the "other" child, the parent predicted "If you don't get ready now we will miss the movie."

Both of these strategies will be coded into the rational authoritative response category and will be considered the same" (categorical) response for both children. The parent may or may not state that they consider the strategies the same.

(2) The parent states "I would handle it the same" and provides no further elaboration.

The response category coded for the target child is also coded for use with the "other" child and the strategies are coded as same.

DIFFERENT (1) For the target child, the parent's predicted communication strategy was "I would tell her to get dressed or else we would be late." For the "other" child, the parent predicted "I would say 'Why don't we put on your new shoes that you wanted to wear today' to get her started."

The first strategy (i.e., relative to target child) is coded as rational authoritative and the second (i.e., relative to "other" child) is coded as diversion. The strategies are therefore coded as different response categories.

(2) For the target child the parent predicted a rational authoritative strategy. With respect to the "other" child the parent states

> that (s)he would use the same strategy, but adds that (s)he would also have to divert the child from the toys. The strategy coded for the "other" is therefore based on a combination of rational authoritative and diversion (hence, coded as diversion) and the strategies predicted for the target and the "other" child are therefore recorded as different from one another.

Note that only the communication strategy predicted for the "other" child is coded. Goals, orientation, temporal focus and constraints are not coded for this portion of the interview.

Parental reports of changes and constancies in their construction of the child (beliefs about developmental processes and states) are coded for both amount of change and reasons for change and/or constancy. First, the coder listens to the entire protocol dealing with such changes and constancies and codes parental verbalizations according to a Likert-type (1-4) scale for amount of change discussed. Then, parental explanations of both changes and constancies in beliefs are coded according to sex types of rationales, presented below. If the parent discusses both change and constancy in terms of one type of rationale, both change and constancy are coded for that rationale (see code sheet).

Rationales and Examples:

(1) Personal: Reasons for change or constancy are presented as internal to the parent and are not discussed in terms of contact with children, other adults, materials or groups.

"As I've gotten older, I've become more liberal in my attitudes."

"I have always felt children need discipline."

"I may be a different person then."

(2) Firstborn: Reasons for change or constancy are discussed in relation to the firstborn's behavior and/or development. No comparisons between experience with first- and later-born children are made, either in terms of similarities or differences.

> "Mary simply outgrew the selfish stage so now I don't think it does any good to encourage sharing at that age."
>
> "That's how Jimmy learned it so I guess that's how all the kids will learn it."

(3) First- and later-borns: Reasons for changes and constancies are described in terms of discrepancies/similarities between two children in the family that have confirmed or disconfirmed prior beliefs. Any reference to parental experience with or observation of the second-born or children in subsequent ordinal positions will be assumed to imply a comparison with the firstborn and will therefore be coded in this category.

> "Teaching time with a clock worked for both of them. That's probably the way for them to learn."
>
> "Now Mikey (second-born) isn't interested in these things. He probably won't learn it until he gets it in school."

(4) Other child: Reasons for change or constancy are based on observations of children outside of the immediate family unit. Comparisons with children in the family may or may not be discussed.

> "I've seen that one child in a family can be shy and another outgoing. This makes me think what the parents do is less important than the child herself."
>
> "All of Jennifer's friends are about at the same level."

(5) External: Reasons for change or constancy are discussed in relation to experiences outside of the home that are related to children's behavior/ development or to inner states of the parents (e.g., source of change/constancy may be books, instruction, advice, changes in social climate, etc.).

"Nowadays, the emphasis is on letting the child learn at her own speed rather than memorizing like when I was a kid."

Source of Beliefs

Content and administration: After the parent discusses predicted communication strategies for "other" children in the family and changes/ constancies in their construction of the child, the parent is asked to discuss influences that have affected how they are raising their child(ren). Specific probes are presented below.

1. Has your own upbringing had any effect on how you are raising your own children?
    a. If NO: Why do you think that your own upbringing has so little effect in how you are raising your children?
    b. If YES: How?
       Can you give me some examples?
       E.g., similar rules your parents had for you, certain activities more important for your children than those your own parents encouraged.
2. What other influences have affected how you are bringing up your children (e.g., mate's ideas, educational experiences, professional advice, books, religion, etc.)?

Use appropriate (a) or (b) probe above for each influence mentioned by the parent.

Coding procedures: Parental responses concerning the effect of their own upbringing on current childrearing practices are coded according to a Likert-type (1-4) scale that ranges from no influence to considerable impact. Direction of influence (i.e., positive versus negative) is not considered in coding amount of influence. The manner in which parents feel that their practices have been affected is then coded according to one of the four categories presented below. Parental responses may be coded into only one of these categories.

(1) Similar: Parents have adopted practices that were used by their own parents.

(2) Different: Parents are rearing children in a manner that is dissimilar to their own childrearing, but their own upbringing is simply disregarded, not rejected. Note that when a parent states that their own upbringing had no influence on their current childrearing practices, the manner in which they are raising their own child(ren) will be coded as different from their parents in most cases.

(3) Opposite: Parents have rejected practices used by their own parents and use childrearing techniques diametrically opposed to their own rearing.

(4) Context dependent: Parents have adopted some and either disregarded or rejected other practices used by their own parents. Record the context in which practices are similar, different or opposite in the space provided.

Other influences the parent refers to are coded on a Likert-type (1-4) scale according to how much influence is attributed to that factor by the parent. Eight possible factors are included on the code sheet. Additional sources of influence are coded as "other" and described in the space provided. Any influence the parent refers to spontaneously is coded according to this scale. If the interviewer probes for specific categories (e.g., mate, books, religion, etc.) code only those categories that the parent actually discusses.

Family Constellation Beliefs

Content and administration: Parents are asked to discuss their beliefs about the effect of family size, child spacing (birth interval) and ordinal position on the child's development. They are also asked to provide their idea of the ideal family size, spacing and birth order. Specific probes comprising this portion of the interview are presented below.

1. What effects do you think family size (# children) has on a child's development?
2. What effect do you think spacing (# years apart) has on a child's development?
3. What effects do you think birth order (only; firstborn; middle; lastborn) might have on a child's development?
4. If you could choose, which birth order would you have liked for yourself? Why? In what size family? Why? How close in years would you want your brothers and sisters to be? Why?

Coding procedures: Parental beliefs concerning both positive and negative effects of family configuration on the child are coded according to five categories: cognitive, social, affective and personality of the child, and non-child-specified outcomes. Each of these caterogies are described below.

(1) Cognitive: The parent refers to an impact on the child's intellectual functioning in general or on particular intellectual skills. For example, references to being intelligent, smart and verbal or mathematical skills will be coded as cognitive outcomes.

(2) Social: The parent describes outcomes that affect the child's relationships and interactions with other persons or the extent of socialization. For example, being shy, competitive, and closeness to one's brothers and sisters implies that the quality of one's relationships with a specific person or generalized "others" are affected and therefore should be coded as social outcomes. In addition, learning rules implies training for the social environment and is also coded as a social outcome.

(3) Personality: The parent refers to some aspect of or the total organization of the child's distinguishing character traits, attitudes or disposition. These characteristics are internal to the child and are expressed as relatively enduring or constant over situations and time. For example, descriptions of the child as a baby, spoiled, dependent, highly motivated or responsible will be coded as personality outcomes.

(4) Affective: The parent describes a transitory or permanent emotional state of the child that results from particular family constellations. Implications that the child feels pleasant or unpleasant are also coded as affective outcomes. For example, the child is happy, feels lonely or left out, something makes him/her feel good and the child likes all that attention will be coded as affective outcomes.

(5) Non-child-specified: The parent refers to effects that do not directly imply an impact on a specific area of the child's development. For example, statements concerning parental attention, economic factors, placing responsibility on the child do not include a reference to a specific effect on some area of the child's development and are therefore coded as non-child-specified.

Note that rate of physical maturation and development of physical skills are not coded as effects of family configuration.

The five categories presented above are coded as areas affected by family size, child spacing and ordinal position. Three variables are included for family size: (1) large families, (2) small families and (3) multiple child families. The parents' definition of large and small families may vary from parent to parent, but each parent's own criterion for large versus small families will be used to code their beliefs about the impact of family size on children. Parents may refer to only one side of the dimension of family size, e.g., discuss effects of large families. Coders should be cautioned not to assume that the inverse effect can automatically be applied for small families. Thus, the parent's verbalizations may be coded according to only one of the family size variables if both large and small families are not discussed. The variable of multiple child families is included for those circumstances when the parent speaks of positive and negative aspects of having siblings rather than addressing issues of large versus small families. When this occurs the parent will often be contrasting the only child with the child who has siblings. In such a case, the only child family is discussed as a particular family size, but references to the effects on the only child will be coded for the only child variable listed under ordinal position.

The two variables included for child spacing are near spacing and far spacing. The same principles are applied to coding these variables as to coding family size variables. That is, the parent's definitions of near and far spacing will be used to define the variables for coding purposes, coders should not assume that inverse effects can be coded for the other variable when only one variable is discussed and if the parent discusses only one of the two variables, only one variable can be coded unless direct implications to other variables are made.

For ordinal position, effects of the firstborn, middle- and last-born positions can be coded as well as effects of being an only child (see discussion of family size for clarification of "only" child). Definition of firstborns, last-borns and only children are rigid but the parents' definition of a middle child may vary, with posited family size. The parents' definition of middle child will be used for coding purposes. As was the case for family size and child spacing, only the birthorder variables actually discussed by the parent are coded.

The coding sheet is constructed with family constellation variables forming rows and developmental areas of impact forming columns. The positive and/or negative effects posited for each family constellation variable are coded by checking off the box marked by the appropriate + (positive effect) or - (negative effect) symbol in the appropriate column(s).

Parental Report of Time Spent with Child(ren)

Content and Administration: Parents are asked to report changes in time interacting with children that occur with changes in family configuration. These reports are retrospective in the case of multiple-child families, i.e., parents are asked how time spent with children has changed with additional births in the family. For single-child families, parents are asked to predict or anticipate changes in interaction time that would occur if an additional child were born.

Probes focus on two aspects of parental time with children: amount of time and form of time spent interacting with target child. The probes are presented separately for multiple- and for single-child families.

A. Multiple child family

(i) Has the total amount of time you spend with the children changed in any way since (names of second- and third-born children) were born? For example, do you spend more or less or the same amount amount of time interacting with the children than doing other things?

(ii) Has the amount of time you spend with (second-born) been different or the same as amount of time you spent with (firstborn)? Has the time you spent with (second-born) changed since (third-born) was born? In what ways? How?

B. Single child family

(i) If you had a second child, do you think the time you spend interacting with the children would change (total time with child(ren) increase/remain same/decrease). In what ways? Why?

(ii) Would you expect the time you spend with (name of firstborn) to change in any way if you had another child now? In what way? Why?

Coding procedures: Parental reports of time spent with the children are coded separately for total amount of time spent with the children and for changes in amount and in type of time spent with the target child.

Reports of total time spent interacting with the children is coded into one of four categories which are described below.

(1) Decrease: less of the parent's time is spent interacting with children than previously, regardless of the reason (e.g., parental change, child enters school, children's needs changed, etc.). The coder should be concerned with reports of the parent's total childrearing time, and disregard changes in the particular target of that time or changes in type of time. The focus is on amount of time with any or all of the children versus parental involvement in activities without the child rather than on a comparison of time with individual children.

(2) No change: The amount of time with children remains constant. Disregard whether time is directed at individual children differently than previously at this point in coding

(3) Increase: The parent spends more time interacting with children as the number of children increases.

(4) No answer: The parent's responses are not codable.

Parent reports of amount of time spent with the target child are coded according to the categories described above. For multiple-child families, the categories are first applied to comparisons with time spent with the firstborn and then to amount of time spent with the target child subsequent to the birth of the younger sibling. For single-child families, anticipated changes in time are coded for time spent with the target child subsequent to the birth of a (hypothetical) younger sibling.

Finally, changes in the type of parent-child interactions are coded according to four categories. Multiple categories may be coded if the parent refers to several types of change. If the parent maintains that the type of interaction time has remained constant, none of the categories are coded. The four categories are defined below.

1. Form change: the time spent with the child may have increased, decreased or remained constant, but current interactions differ in a qualitative manner from previous types of interactions (e.g., interact as a group rather than in a dyad).

2. Substitute time:other parent: the time spent with the child is altered in that the one parent is spending more time with the child than previously, in a manner that is at least partially compensatory as the other parent is spending less time with the child for some reason.

3. Substitute time:nonparental: the time spent with the child is altered and the child is involved in some nonparental interactions (e.g., sibling, playmates) or activities (e.g., school) more frequently than before.

4. Other: The parent may refer to changes not included in the three definitions above. These changes are coded as "other" and described in the space provided.

Comparison of Children in Different Ordinal Positions

Content and administration: Parents are asked to describe their children in terms of differences and similarities and to provide a rationale for these differences/similarities. Interview probes are varied so as to be appropriate for type of family configuration of the particular parent.

A. Multiple child family

(i) Do you think (name of oldest) and (name of middle) are more like each other or more different from one another? In what ways? Why do you think they're so alike/different? Did you expect them to be so alike/different?

(ii) What about (name of youngest)? How do you think (s)he will be (with regard to attributes under discussion)? Why?

(iii) Have your expectation about what four-year-olds are capable of doing and thinking changed in any way since you have had children or have they been pretty much the same all along? Did you have different expectations for (name of middle) than you had for (name of oldest)? What were they? Why were they different for (name of middle)?

B. Single child family

(i) If you have a second child, would you expect him/her to be more like or more different from (name of child)? In what ways? Why do you think they'd be alike/different?

(ii) Have your expectations about four-year-olds' capabilities and thinking changed in any way since you have had (name of child), or have they stayed pretty much the same? Do you think you would have the same expectations for a second child as you had for (name of child)? Why?

Coding procedures: Comparison of firstborn and second-born children and of second-born and third-borns are coded separately for multiple-child families. For single-child families, a comparison of the only child with a hypothetical younger sibling is coded.

Reports of similarities and differences between children are coded according to three criteria: (1) perceived similarity/difference, (2) area of development discussed, and (3) perceived source of differences/similarities.

For comparisons of first- and second-borns, the parent's verbalization is coded as implying similarity, difference or both similarities and differences in one of the five areas of development (cognitive, social, personality, affective or other). The parent's perceived source of similarity/difference is then coded (genetic, environmental, interaction of genetics and environment, sex differences). If the parent merely refers to both genetics and environmental factors without implying an actual interplay of the two, genetics and environment are both coded but interaction is not. That is, interaction is coded as a source only when the influence of genetics and environment is discussed as a nonadditive, inseparable process.

For comparisons of later borns with target children and older siblings, the coding system is the same as above with one additon. If the parent indicates that the third-born child is expected to represent a combination of the older two siblings characteristics (rather than be similar or different than his/her siblings), this category is included in the coding system.

Parental retrospective reports of expectancies of similarity and differences prior to birth of later born-children are coded simply as same (i.e., later-born children were expected to be the same as older siblings),different (later-born sibs were expected to differ from older siblings) or context-dependent (both similarities and differences were expected). Parental expectations of the abilities of children in the family are coded according to same three categories of same, different and context dependent.

Estimates of Reliability and Validity

The Communication Belief Questionnaire and Interview Schedule was administered to 48 parents who were participating in a preschool program at Educational Testing Service and to 26 parents enrolled in an adult education course at a nearby college in 1977. The data from this sample was analyzed in order to obtain estimates of reliability and validity of the instrument. Results of these analyses are presented below.

Reliability: There are two major categories of reliability that are necessary in order to make reasonable interpretations of parents' scores--estimates of stability over time and estimates of internal consistency (cf. Anastasi, 1968; Stanley, 1971). In addition, estimates of interscorer agreement are useful for establishing estimates of the accuracy of the assigned scores. Information concerning all three types of reliability are available for the CBQI.

(a) Temporal stability: Estimates of stability over time are available for two groups of parents--the 48 parents participating in our preschool program and 26 parents enrolled in an adult education course at a nearby college. The CBQI was administered twice to each of these parents, with the two sessions approximately 6 weeks apart. Product-moment correlations were computed separately for the ranks given to each of the five response options at Time 1 and at Time 2. These coefficients ranged from .70-.93 for the 48 preschool program participants and from .64-.82 for the other group of parents. High correlations (above .80) were uniformly obtained for strategies that parents liked best and liked least. Lower correlations (between .64 and .80) were obtained for those options that were ranked somewhere in the middle, usually normative or direct authoritative statements.

(b) Internal consistency: Correlations between equivalent halves of the test can provide an estimate of the degree to which the 12 situations assess a similar dimension (viz. communication strategy beliefs). The correlation between ranks given to the odd and even numbered items of the CBQI (with Spearman-Brown correction formula) ranged from .53-.69 for each of the five types of response options. Given that the 12 situations were purposely varied with respect to content (e.g., teaching physical facts and principles, social interactional and child management issues were presented and items put in a random order), and that these coefficients are significant at the .01 level, there is ample evidence that the CBQI taps a unique dimension although items are not homogeneous.

(c) Interscorer agreement: Since product-moment correlation coefficients do not necessarily indicate absolute agreement between judges, the percentages of actual agreement between two independent coders are reported in this paper. Agreement between two scorers who independently coded the interview responses of the 48 parents was 92% for preferred and predicted strategies and 87% for childrearing goals.

Validity: The concept of validity required that a measure performs as expected on the basis of underlying concepts. Validity is usually classified into four types: content, concurrent, predictive and construct validity. Each of these will be discussed below in relation to data available on the CBQI.

(a) Content validity: Content validation is essentially judgmental. Each item is judged for its presumed relevance to the property being measured. Twenty-eight students enrolled in an adult education course served as judges for several investigations concerning the content validity of the CBQI items. First, the students were told to evaluate 20 interview items with respect to relevance to parental childrearing practices. The students rated these items on a 3-point scale. The 12 items that were finally selected for inclusion in the CBQI were rated as "most relevant" (#3) to childrearing practices by 82% of the students. (This is not a surprisingly high percentage since all 20 items were initially written with childrearing beliefs in mind as the content.)

In addition, students were given definitions of each of the five types of response options which were constructed so as to represent five different types of childrearing strategies. Then they were required to rank 20 statements for each type of response option on a 3-point scale. Judgments of these statements as representative of each type of childrearing strategy (rank of 3) ranged from 60% to 85% for the five types of response options.

(b) Predictive and concurrent validity: Predictive and concurrent validity are similar to one another in that both are characterized by prediction to an outside criterion. A relationship between parental childrearing beliefs, as assessed by the CBQI, and actual parental behaviors would provide evidence of the validity of the CBQI. The relationship between parental responses to CBQI and coding of parent-child observations with the Parent-Child Interaction Observation Instrument (Appendix C) was therefore investigated. This analysis involved dividing the 48 parents into two groups based on their CBQI scores for preferring distancing strategies. The parents who scored above the median were grouped into a "high preference" group and those below the median were grouped as having "low preference" for distancing strategies. Both groups of parents were observed interacting with their child on a structured teaching task and one semistructured storytelling task. For each task, parents were classified as either high preference- or low preference "distancers" by raters who were blind to the parents' CBQI scores. A contingency analysis between preference scores on the CBQI and distancing scores obtained from the structured teaching task indicated that a significant relationship exists ($x^2(1) = 5.32$; $p < .01$). No significant relation was found between CBQI scores and parental behavior with the semistructured task.

(c) Construct validity: A significant point about construct validation is that it is inextricably entwined with theory. Construct validity and empirical investigations go hand in hand since one must try to validate the theory behind the test. Cronbach (1960) has stated that construct validation involves suggestions about constructs that account for performance, formulations of hypotheses from theory involving the construct,and running empirical tests. This is part of the basic design of the project now underway.

Aside from the fact that the CBQI was constructed on the basis of distancing theory's requirements, a factor analysis of parental responses to the CBQI, the PARI (assessment of authoritarian attitudes toward childrearing, Cross & Kawash, 1968) and Marlowe Crownes social desirability scale (1964) was conducted in order to demonstrate discriminant validity between the CSQI and these other measures. In addition, distancing theory predicts that parents should have different strategies when they are teaching their child than when they are managing their child's behavior. Therefore, the factor analysis will illustrate construct validity if social desirability and PARI scores do not cluster with CBQI scores and if teaching items cluster together and nonteaching items cluster together. The results of the factor analysis, presented in Table 1, confirm the first set of predictions, That is, social desirability scores loaded on one factor (#2), PARI scores on two other separate factors and CBQI scores on Factors 1 and 6. Partial support is found for the prediction that strategies vary with the content of the item.

All CBQI items that loaded on Factor 6 (3, 4, 7, 8, 11, 12) were nonteaching situations. Almost all the CBQI items, regardless of teaching content, loaded on Factor 1.

Table 1

Factor Analysis of CSQI, Social Desirability and PARI Scores

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
CBQI Item 1	.77	-.06	.04	-.20	.07	.26
CBQI Item 2	.70	-.10	-.17	-.33	.08	.39
CBQI Item 3	.20	.00	.06	-.06	-.16	.62
CBQI Item 4	.58	-.01	.31	-.09	.09	.65
CBQI Item 5	.46	-.40	.19	-.44	.16	.47
CBQI Item 6	.67	-.40	.29	-.22	.09	.36
CBQI Item 7	.52	-.09	.25	-.18	.07	.64
CBQI Item 8	.65	-.28	-.04	-.17	.25	.59
CBQI Item 9	.75	-.29	.03	-.31	.40	.54
CBQI Item 10	.72	-.33	.23	-.15	.17	.37
CBQI Item 11	.48	-.18	.18	-.08	.29	.79
CBQI Item 12	.43	-.31	-.16	-.07	.39	.58
SDT	.22	-.90	-.01	-.38	.07	.05
SDF	.05	-.84	.23	-.18	.47	.10
SD	.16	-.99	.11	-.33	.28	.08
PARI 1	.06	-.25	.61	-.29	.44	.46
PARI 2	.14	-.19	.71	.11	.06	.28
PARI 3	-.41	.23	.61	.24	-.06	-.03
PARI 4	-.19	.33	-.22	-.84	-.20	-.06
PARI 5	.19	-.34	-.04	-.18	.80	-.05
PARI 6	-.24	.22	.21	-.65	-.07	-.04
PARI 7	-.02	.24	-.24	-.62	-.59	-.08
PARI 8	-.28	.33	.06	-.83	-.08	-.20
PARI 9	.20	-.37	-.45	-.59	.32	.07

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Appendix B

CHILD ASSESSMENT BATTERY ADMINISTRATION AND SCORING MANUAL

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Child Assessments

A. Children's knowledge of the physical world:

1. Purpose

Four tasks assessing operatory understanding of the physical world were be administered to each child participating in the study. Performance on each of these tasks indicates the child's level of representational competence, which stems from and is dependent on the child's underlying structures of intelligence, or operations. Children's performance on these tasks were expected to vary with parental communication strategies if, as distancing theory predicts, operatory development is enhanced by distancing agents in the child's environment. The four tasks included in this study were: (1) A static reproductive imagery (memory) task; (2) a kinetic anticipatory imagery task; (3) a conservation of continuous quantity task; and (4) a categorization task. The procedure and scoring systems will be described separately for each task in the following sections.

2. Static reproductive imagery

(a) Materials and procedure: Tasks used to assess the child's ability to reproduce states were first introduced by Piaget and Inhelder (1971). The materials and procedure for the task included in this study were modeled after one of these tasks, with a few minor additions. The apparatus consists of a large standing mirror, a screen, a board mounted with five rows of blocks and two sets of blocks that varied in shape and color.

The experimenter and the child sat opposite each other at a low table with the screen between them. The experimenter began by constructing a row of seven blocks on her side of the screen, out of the view of the child. The child was told that when the screen is removed, he should look at the experimenter's row of blocks very carefully because later he will have to remember it. The screen was then removed. The child was given a set of blocks that includes all the blocks necessary to construct the row, plus three blocks that were not included in the experimenter's row. The child was required to build a row of blocks that exactly matches the experimenter's row, which remains in view throughout this phase of the task.

The child was next given the seven blocks necessary to make the row the experimenter first constructed. The child was instructed to make a row of blocks that is exactly like the one the experimenter first showed him. The time in seconds that elapsed as the child constructed his row and the order of block placements were recorded by the experimenter.

All materials were then removed from view and a board displaying five rows of blocks is introduced to the child. One row was identical to the row first built by the experimenter, one row presented a block not included in the original array and three rows had blocks in incorrect locations at different points in the row. The child was asked to point to the row that was the one the experimenter first constructed. The child's choice was recorded by the experimenter.

(b) Coding: Four scores were assigned for this task. (1) The time in seconds that it took the child to construct the array of blocks, (2) the number of blocks placed in the correct location, (3) the number of blocks placed in correct relation to another block (i.e., red triangle: green rectangle or green rectangle; yellow square or yellow square; red arc or red arc; yellow circle or yellow circie; blue rectangle or blue rectangle: green triangle, and (4) success versus failure in recognizing the correct array.

3. Kinetic anticipatory imagery

(a) Tasks assessing the child's ability to anticipate states that result from stipulated transformations were first introduced by Piaget and Inhelder (1971). The materials and procedure used in this study were a variation of those described by Piaget. The materials for this task consisted of a clear square piece of Plexiglass with a blue and red square mounted on it (see Figure 2). The blue square was rigidly affixed to the Plexiglass and the red square was attached by a pivot screw to the lower right corner of the blue square. The red square also had a handle which extended from the corner diagonally opposite the pivot. Movement of the handle caused the red square to rotate. Four paper dots were glued near each corner of the Plexiglass, 90° apart. In addition, a number "1" and the number "2" appeared at the midpoint of the right and top sides of the Plexiglass, respectively. A rectangular choice board with two pairs of squares on one side and five pairs of squares on the other side were also used as stimulus materials.

The task consisted of two phases: A training session to familiarize the child with the apparatus, and anticipation of rotations. The experimenter and the child sat on opposite sides of a narrow table with the Plexiglass board between them throughout the entire task. The child viewed the apparatus from the front and the experimenter from the rear. For the training phase the rectangular board was placed on the table directly in front of the child with the two pairs of squares face up. The experimenter told the child that she was going to move the handle on the red square from the lower right dot to the position marked by the number 1 (midpoint of the right side of the Plexiglass square). She instructed the child to imagine the movement before she performed it. The child was asked which set of squares on the choice board matched the squares on the Plexiglass after the rotation is performed. After the child made his selection the rotation was performed and the child was given feedback about his choice. The child was then asked to point to the spot on the choice board where the pivot screw should be. The handle on the red square was then moved back to the dot in the lower right corner of the Plexiglass. This entire procedure was then repeated for a rotation to number 2 (the midpoint of the upper side of the Plexiglass).

The choice board was then turned over to the side displaying five pairs of squares and phase 2 began. During phase 2, the actual rotations stipulated by the experimenter were not performed and the child received no feedback about his performance. The handle on the red square remained at the dot in the lower right corner of the Plexiglass. The experimenter began by asking the child to imagine what the squares would look like if the handle on the red square were moved to the dot in the upper right hand corner of the Plexiglass (90^{o} rotation). The experiementer indicated the rotation gesturally. The child was asked to point to the pair of squares on the choice board that represented what the squares would look like after the rotation. The child was then asked to point to the place where the screw connecting the two squares should be on the choice board. After the child responded, the experimenter repeated this procedure for a 180^{o} rotation trial (to the dot at the upper left corner), for a 270^{o} rotation trial (to the dot at the lower left corner), and for a 360° rotation trial (to the dot at the lower right corner, the starting point). The child's selection, and anticipation of screw location were recorded for each trial.

(b) Scoring: The training session, phase 1, is not coded. Each of the four rotations during phase 2 was coded in two ways: (1) number of correct choices of the outcome of the rotation, and (2) number of times screw placement was correct (maintenance of anchor point).

4. Conservation of continuous quantity

(a) Materials and procedure: The materials and procedure for the conservation task used in this study were similar to those described by Piaget and Szeminska (1965), but with a few additions. The materials include a large flask half filled with colored water, two 500 ml. beakers and a 75 ml. cylinder. The experimenter poured 50 ml. of liquid into one beaker and 100 mls. into the second beaker from the flask. The experimenter adjusted the level of the liquid in the second beaker until the child agreed there is the same amount to drink in both containers.

The empty cylinder was placed in front of the child. The child was first asked to predict the liquid's level if it were to be poured from one of the beakers into the cylinder. He was then asked why the liquid would be at that level in the cylinder. The experimenter then pours the liquid from one of the beakers into the cylinder. The child was asked if there is the same amount to drink in the cylinder as there is in the beaker with 50 ml. of liquid in it, and why.

The experimenter then told the child that she was going to pour the liquid from the cylinder back into the empty beaker. The child was asked to predict the level the liquid will reach in the beaker. The experimenter poured the liquid back into the beaker. The child was asked if there was as much to drink in the beaker as there was in the cylinder, and why. Then he was asked if the two beakers had the same amount to drink.

(b) Scoring: The child's anticipation of the transformation of liquid from the beaker to the cylinder is scored in three ways:

(1) the child's prediction of the liquid level was coded in milliliters; any level over 50 mls. was coded as 60 mls.

(2) the child's performance was summarized as:

1 = nonconservation (there has been a change in amount to drink)

2 = intermediate (changes mind about equality; correct prediction (over 40 ml.) but no/inappropriate rationale; incorrect prediction but appropriate rationale)

3 = conservation (prediction over 40 ml. and an appropriate rationale)

(3) the type of argument given for the transformation:

0 = nonconserving; "It has more because it's higher."

1 = identity; "Didn't put any more in."

2 = reversibility; "It was the same in those cups." "If poured back, will be same."

3 = compensation; "It's skinnier so the water goes higher."

5. Categorization

The sorting task was the short form of Sigel and Olmsted's Categorizing Test (1968). The materials included a blue matchbook, four multicolored blocks glued together on a small platform, a white spoon, a yellow pencil, a red, blue and white metallic top, a brown and black pipe, a yellow cup, a white notebook, a blue ball, a white cigarette, a box of crayons and a metal bottle opener. The child and the experimenter sat side by side at a table. The experimenter introduced the objects one at a time in the above order and asked the child what each object was called. The objects are placed into a 4 x 3 matrix as the child labels them.

Testing is divided into two phases: (1) the active sort, and (2) the passive sort. During phase 1, the experimenter first removed the pencil from the matrix and put it on the table near the child. The child asked to get all the other things that were the same or like the one the experimenter had placed aside. After the child grouped the items he was asked how the objects he has chosen are the same or alike. The objects were then returned to their place in the matrix. This procedure was repeated for five other trials--the ball, then the bottle opener, the notebook, the blocks and the spoon.

The passive sort consisted of four trials. The experimenter first removed all the objects from view. He then placed the pipe, cigarette and matches in front of the child. The child was asked how these items are the same or alike. These objects were removed from view. The same procedure was followed for the remaining trials. Trial 2 objects are the cup, bottle opener and spoon. The notebook, pencil and crayons are used for trial 3 and trial 4 consists of the ball, the blocks and the top.

Scoring

Each response made by the subject was scored for two aspects, the verbal level of the response and the type of classification used.

VERBAL LEVEL

SCORABLE RESPONSES

Grouping Responses: Grouping responses are those in which a meaningful relationship between all of the items grouped is given. There are three types:

1) Appropriate —All items sorted from the stimulus array must be included in a fully articulated response. A fully articulated response must include a categorical label or the labels of all items included in the sort. A pronoun will be accepted as a substitute for the item label(s) if the referent of the pronoun is unequivocal: e.g., "they are all round," or "they are the same color."

If the items are treated separately, but the same, the response is scored as Appropriate: e.g., "this is yellow and this is yellow," or "you play with this and you play with this," or "you eat with the spoon and you eat out of the cup."

When the action attributed to one of the items needs, or is commonly associated with, the presence of the other item(s) for its execution, score as Appropriate since the child has selected these items from the matrix: e.g., "light the cigarette," when the items are the matches and the cigarette.

2) Additional --If the child gives a verbal response which does not fulfill the criteria for full articulation, but through implication expresses a unifying concept, score as an Additional: e.g., "yellow," or "long." Such implications may also be assumed when a single verb represents the function of all the items: e.g., "smoke," or "play."

Also score as Additional, responses where the basis of classification is indicated manually: i.e., no verbal response but the child points (→) to blue parts on all of the objects selected.

Note: When gestures accompany a fully articulated response: e.g., "they are all blue" and the child points to blue parts of the items selected, score as Appropriate as the gestures are redundant with the verbal response.

3) Labeling Error --Here the child has grouped items which are, in fact, similar, but gives the incorrect label for the grouping: e.g., puts blue items together and says, "they are all yellow."

CLASSIFICATION

All responses (grouping and nongrouping) of the child were scored as representing either low or high levels of classification. Low levels could be based on descriptive characteristics (e.g., form, color) or relational contextual characteristics (e.g., "light the cigarette with the matches, they go in the kitchen"). High level scores indicated that the child supplied a class lebel (e.g., they are all toys) or provided a category based on function (e.g., you play with them).

1) Categorical

low functional	--One object or picture is related to the stimulus because both are used for the same purpose: e.g., "you write with them," or "you play with them," or inferred action properties such as rolling or spinning.
high functional	--Two or more objects or pictures are chosen to go with the stimulus because all are used for the same purpose or inferred action properties such as rolling or spinning.
class label	—One term is used to define two or more items included in the class: e.g., "toys," or " kitchen things," or "writing things." This response can also be used with single items: e.g., "this (→T) is a toy," when the objects are the top and the bottle opener.

B. Children's knowledge of the social world

1. Purpose:

Three tasks assessing the child's understanding of the social world and social relationships were administered to each child participating in the study. The child's knowledge of the social world is viewed as dependent on operatory development in the same manner as knowledge of the physical world is seen to be derived from the child's own constructions. Children's performance on these tasks should be related to their own performance on the four tasks described in the previous section since the operations are the source of both kinds of knowledge. Similarly, the child's representational competence should vary with parental communication strategies since the child's operatory development should be influenced by distancing behaviors that occur in his home environment. The three social knowledge tasks used in this study are: (1) an interview about rules and conventions, (2) an interview about interpersonal problem solving, and (3) an interview about friendships. The procedure and scoring systems are described separately for each task in the following sections.

2. Rules and conventions:

(a) Materials and procedure: The rules and conventions task was a verbal interview which consists of eight items. These eight items varied in two ways: (1) the content of the item referred to a physical rule or a social rule, and (2) the item may be positive or negative. Physical rule/convention items were defined by the fact that a violation may result in a negative external state in the physical environment--either to a person's body or to some object in the environment. Social rule/convention items were defined by the fact that a violation may result in a negative internal state for some other person in the child's environment--either to a person's affective state or to their state of knowledge. Positive items were presented in conformity with the rule/convention and negative items are presented as violations of the rule/convention. Thus, a conventional response to positive items was "Yes, it is all right" and to a negative item the conventional response was "No, it is not all right."

The experimenter began each item by asking a closed question--"Is it all right/OK to (do something)." After the child responded the experimenter asked the child "Why?" or "Why not?". If the child responded with a nominal or evaluative reason (see Scoring) the experimenter probed for more information.

Example: E: "Is it OK to eat candy right before supper?"
S: "No."
E: "How come?"
S: "Because it's not right." (evaluative)
E: "Why isn't it right to eat candy before supper?"
S: "Because then you won't eat your supper."

Nominal and evaluative responses must be further probed with the "Why" question because the child may have knowledge of an underlying rationale for the nominal/evaluative response, but may not feel the necessity of expressing it to the experimenter.

(b) Scoring: The child's answer to the closed question (Is it OK to...?) is coded as indicating knowledge of the rule of convention. That is, for each item,

0 = OK., a nonconventional response (does not conform to the rule)

1 = a conventional response (conforms to the rule)

The argument the child gave as underlying the rule or convention was coded as indicating a low, high level rationale. Low level rationales included:

D.K., no answer

Idiosyncratic: a personal experience or feeling of the child is the basis for the rule. The basis for the rule is something internal to the child. Irrelevant statements are also coded as idiosyncratic.

Examples: "I want to"

"I say so"

"Once a friend ripped my picture"

"It happened to me once"

Nominal: the rule exists in name or form only; it is not based on a logical or consensual principle. The child recognizes that the rule exists but cannot articulate a reason for following the rule. Any repetitions of the statement as the rule itself are coded as nominal.

Examples: "It's not okay"

"You just can't"

"You have to do it"

"You can (repeats stem of question)"

"Because"

Evaluative: the child recognizes the significance and the worth of the rule, but does not articulate the substance of the worth; i.e., the child does not provide a basis for the worth of the behavior in question outside of conforming to the rule.

Examples: "It's not good to take it"

"It's nice to do it"

"It isn't right"

Intermediate level rationales included:

Affective: the child bases the reason for the rule in another person's reaction to the behavior; the other person's emotional state is the primary basis for the rule

Examples: "Maybe he would be mad"

"Then she will be happy"

Physical-perceptual: the reason for the rule is that some concrete external state will occur or is necessitating the behavior; the child's primary concern is with environmental outcomes or conditions that necessitate adherence to the rule; either an object or his own physical abilities are focused on.

Examples: "The table is high"

"I'll get sick"

"It might hurt me"

"I'm too little to help"

High level rationales included:

Authority-based: behavior is determined by perceived enforcement of the rule by some person who has more knowledge or power than the child. Rules exist because an authority has laid them down.

Examples: "My mother will get mad"

"A policeman would arrest me"

"The dentist said I have to"

Normative: the rule is a principle of right action that derives its power to guide and regulate people from a mutual consensus;

the rule is a standard derived from a group; it is necessary to follow the rule because that is the only acceptable behavior; the norm itself or some sanction for violation of the norm must be implied.

Examples: "That's the only place we're allowed to eat"
"You are supposed to ask before you borrow"
"Everyone should brush his teeth three times a day"

Rational: the rule exists for a valid logical reason above and beyond consensual reasons and environmental demands; some notion of cause and effect should be implied.

Examples: "You will be too full to eat supper"
"So crumbs don't get on the floor"
"They won't know where their bike is"

3. The concept of friendship:

(a) Materials and procedure: The child's conception of friendship was investigated through a verbal interview with the child. The interview had three main parts, each of which is composed of several items. The four components of the friendship interview deal with (1) the child's definition of friendship, (2) the child's rationale for friendships, and (3) the stability of friendship as a mutual relationship over a variety of situations.

A total of 15 items comprise all three components of the interview. Each of these items were first phrased as general questions about friends. If the child did not respond, the experimenter rephrased the question in terms of concrete situations, eliciting the name of one of the child's friends. If the child continues to have difficulty responding, the experimenter constructed a story about the friend with the interview item as a question to the child about how the story would end. All of the 15 interview items were probed for rationales that may lie behind the child's thinking about his friends. That is, the experimenter was pursuing the child's responses, constantly attempting to obtain an elaborate description of the child's ideas about his relationship with others.

The experimenter and the child will sit in a small room and their conversation will be recorded. The experimenter first asked the child to define friendship.

"What is a friend" or

"Who is a friend"

The child was then asked to give a description of friendship. Two items were used to elicit a general description. The experimenter continued to probe any ambiguities presented by the child.

"What is a friend like"

"Tell me about your friends"

The child's rationale for friendship was then elicited.

"Why are they your friends?" or

"What makes them be friends?" or

"What makes two people friends?"

The experimenter then asked the child to give a rationale for affect that may be involved in the relationship of friendship. First the experimenter asked the child to explain the "other's" affection for the "self," the child:

"Why does your friend like you?"

Then the child was asked to describe and explain any affect on his own behalf for the other person involved in this relationship:

"Do you like your friend?"

"Why do you like your friend?"

The child's ideas about the relative variability and stability of the relationship were then explored under a variety of conditions. The child was required to explain any contingencies that are involved in the development, termination and continuation of the relationship. The nine items concerned with changes in friendship were:

"When you do not see your friends, are you still friends?" (and why)

"If your friend moved away, are you still friends?" (and why)

"When your friend plays with someone else, are you still friends?" (and why)

"When your friend is at his own house and you are at your own house, are you still friends?" (and why)

"If your friend grew real big, real tall and you were still little, would you still be friends?" (and why)

"When you are asleep, are you still friends?" (and why)

"Could your friend do anything to you so you wouldn't be friends any more?" (what? why?)

"If your friend hit you, would you be friends?" (and why)

"If your friend said he was sorry, would you be friends?" (and why)

(b) Scoring: Children's definitions, and rationales for friendship's existence were coded as low level or high level definitions of friendship.

Low level definitions included:

D.K., no answer

Idiosyncratic: The child's ideas about friendship are expressed as descriptions of a particular friend which cannot or are not generalized to include possible relationships with other persons.

Irrelevant and egocentric responses are also scored as idiosyncratic.

Examples: "I have lots of friends"

"My friend is a boy"

"My friend is Sally"

Nominal: the concept of friendship is inherent in the fact that friends exist. The label of "friend" automatically creates and embodies the relationship referred to as "friendship." Any repetitions of the question as the rationale behind the concept are coded as nominal.

Examples: "Cause they're my friends"

"Cause I do"

"Cause that's a friend"

Physical/perceptual: friendship is determined by some factor external to participants of the relationship. Both objects/possessions and physical characteristics of the environment/persons involved are physical/perceptual rationales.

Examples: "He lives next door"

"He has a slide"

"We're both little"

Behavioral: the relationship exists because of some activity either the child or his friend engage in. Both members of the relationship do not necessarily share this activity. The fact that the activity is in the repertoire of one of the participants defines the friendship.

Examples: "She plays"

"He can sing"

"She never hits"

High level definitions included:

Affective: friendship is defined as an emotion that is felt for the other participant in the relationship; the source of the emotional tie is not expressed and no mutuality of the affect is implied.

Examples: "I like her"

"Someone I care about"

"She likes me"

Personality attribute: the relationship is the result of some characteristic of one of the members; this characteristic is expressed as important for only one of the participants of the friendship and no mutuality is implied.

Examples: "She is nice"

"He isn't mean"

"I am nice"

Interactive: the friendship exists because of some shared social activity; both members participate in the activity together or share some affinity for those activities; no mutual fulfillment of need is implied.

Examples: "We play together"

"She never hits me"

"We do all kinds of things together"

Reciprocity of relationship/shared needs: the friendship is defined by the fulfillment of some internal state for each member simultaneously; activities may be included, but underlying those shared activities is a broader and more basic bond that has arisen out of kinship; a personal tie to another.

Examples: "We share our feelings with each other"

"We do everything together and really know each other"

Children's statements about the stability of the relationship are coded such that:

0 = D.K.

1 = YES (the relationship would continue unchanged)

2 = NO (the relationship would be terminated)

3 = VARIABLE (the relationship would change as a result of situation but not necessarily be terminated)

4. Interpersonal problem-solving:

(a) Materials and procedures: The eight situations included in this interview are presented with dolls acting out each situation. The stimuli used for this task included three dolls the same sex as the child, a minature tray of cookies, a miniature slide, a puppet that fits the doll's hand, a small ball, and a miniature table and chair. For the 4-year-old children, the three dolls were the same size, approximately three inches tall. For older children, two dolls were three inches tall and one doll was five inches tall. All the dolls were dressed differently than one another.

The experimenter and the child sat side by side at a table and the task was recorded with a cassette recorder. If the child was a 4-year-old, the experimenter choses the doll that was dressed most like the child and pointed this fact out to the child. The child was told to pretend that the doll was the child himself. The experimenter found out the name of one of the child's same-sex friends. One of the other dolls represented the friend. The child was asked to point to each doll--the one that represented the child himself and the one that represented the friend--to ensure that the child understands who each of the dolls represented. With the older children, the taller doll was used to represent the child and one of the smaller dolls was used to represent his four-year-old sibling. For both older and four-year-old children the third doll was necessary for only one of the situations which involved a third child.

Half of the eight situations presented to the child involved a conflict between the "child" and the "friend" younger sibling. The child was asked what he would do to resolve the conflict and whether he thought the strategy would work or not. The child could respond to any of those questions verbally or by acting out with the dolls. The four conflicts involved:

(1) The "friend" has some cookies; the "child" wants some.

(2) The "friend" has a ball; the "child" wants to play with it.

(3) The "friend" wants to go home for lunch; the "child wants the friend to eat at his house.

(4) The "friend" is playing with someone else; the "child" wants to play with the friend.

The other four situations required the "child" to teach the "friend" some game or social skill. The child was asked what he could do so the game could be played and was asked whether "the friend" would know hot to do the activity after the strategy was implemented. The four teaching situations were:

(1) The "child" wants to play ring-around-the-rosie; but the "friend" doesn't know how.

(2) The "child" falls and hurts himself and wants the friend to stop laughing at him; but the friend just laughs.

(3) The "child" wants to put on a puppet show; but the "friend" never played with puppets before.

(4) The "child" wants to play school and wants the "friend" to be the teacher; but the "friend" doesn't know how.

(b) Scoring: The children's strategies for solving the interpersonal situations were coded into one of seven categories. These categories were:

(1) Idiosyncratic: Responses that are from an obscure or unknown source, as well as failure to provide any strategy.

Examples: "I don't know"
"My house is red"

(2) Engagement: An attempt to draw favorable attention or become involved in the activity without an explicit attempt to draw a response from the other person.

Examples: "I'd ask for some"
"Say please"
"I would show her how to write on a blackboard"

(3) Telling: Directive approaches that include requirement of a response.

Examples: "Give me a cookie"
"I'd say 'Write on the blackboard'"

(4) Aggression: Forceful or hostile verbal or physical attack.

Examples: "I'd take it away from her"
"I'd hit her"
"I'd call her a rat"

(5) Participation: Activity requiring an immediate and active interchange between two person.

Examples: "I could trade another toy for the ball"

"We take turns"

(6) Withdrawal: Leaving the interpersonal problem at least momentarily; included responses in which the child became involved in another related or unrelated activity.

Examples: "I'd get my own cookies"

"We'd play something she did know"

"I'd wait until he's done with it"

(7) Authority intervention: Seeking help or support from someone considered an expert or powerful figure by the child.

Examples: "I'd tell her mother she's not sharing"

"I'd ask Dad to show him how to work the puppets"

Children's responses regarding whether they thought their strategy would work were coded as "predicted effective" or not. Responses that included contingencies for effectiveness (e.g., "It depends on how he feels") and "don't know" responses were not coded as predicted effective.

Estimates of Reliability and Validity

A discussion of the reliability and validity estimates obtained to date for the three tasks devised from Piaget's work is warranted. We are aware of the controversy concerning the standardization of Piagetian tasks (cf. Brainard, 1977; De Vries & Kohlberg, 1977; Green et al., 1971) and we feel this controversy raises several issues with respect to the reliability and validity of the data presented in subsequent sections of this report.

First, it is difficult to obtain estimates of stability over time since we are assessing children who are proceeding through preoperational and concrete operational phases of development. There is evidence that performance changes over time may be due to developmental shifts in operative understanding rather than to problems inherent in the task or in measurement. For example, Furth, Youniss and Ross (1974) identified a preoperational subgroup of children whose "memory" of the configuration of liquid in a tilted container improved over time. Performance improvements were interpreted as due to an increased understanding of horizontality, i.e., a developmental progression, rather than to memory factors per se. Findings such as these, coupled with the fact that performing the tasks at Time 1 may provide a learning experience for the child, increasing scores at Time 2, led us to omit measures of test-retest reliability.

Second, the estimates of internal consistency reported for these tasks must be considered within the context of the task itself. For example, Piaget (1971) reports that often children will be capable of predicting the results of transformations in conservation experiments before they will evidence understanding that the amount of the substance does not change. Correlations between predictions and justifications of why the amount did/did not change were computed for our sample, but such findings should be interpreted within the context of the theory where children are expected to succeed on some portions of the task before other portions. In addition, the static reproductive imagery task consists of two phases which relate to reconstructive and recognitory memory. Since recognition is usually found to be superior to reconstructive memory, these reliability estimates should be interpreted within that framework. The third Piagetian task, kinetic anticipatory imagery, involves four rotations. It was not amenable to tests of internal consistency since the rotation items each yield a separate score and these items vary in difficulty.

With respect to validity, findings with these tasks have been replicated many times since Piaget first introduced them. Validation of such tasks relies heavily on construct validity. These tasks have been formulated on the basis of Piaget's theoretical constructs and have been used to assess logical reasoning and memory. An extensive bibliography has been formulated that attests to this (cf. Peterson, Hooper, Wanska, & De Frain, 1976). In addition, cross-cultural research has been reviewed by Dasen (1972). Generally, performance on these tasks is considered to indicate the child's level of operatory knowledge. Although we accept the established validity of these tasks, two estimates of validity will be reported for each task. First, performance on each of these tasks was correlated with performance on the PPVT. Although the PPVT relies heavily on verbal ability, it is accepted as a general measure of intelligence. Second, children's scores on the three Piagetian tasks were intercorrelated with one another to determine that they are related to one another in what they are measuring (viz. operatory knowledge of the physical world). However, Piaget's theory does include constructs such as decalage which would account for variability in performance across tasks and these results should be considered within context of the theory.

Static Reproductive Imagery (SRI)

Reliability: These reliability estimates were obtained on the 37 children participating in the preschool program.

(a) Internal consistency: A product moment correlation was computed on children's reconstructive memory scores recognitory memory scores. The correlation obtained was .40, significant at the .05 level.

(b) Interrater agreement: The two independent scorers immediately reached 100% on this task. Few judgmental decisions are required within the scoring system.

Validity: Measures of concurrent or predictive validity are available in that the PPVT was administered to this group of children as a measure of general intelligence. Scores on SRI correlated .31, $p < .05$, with scores on the PPVT. Intercorrelations between performance on SRI and the other tasks are reported in Table 2 at the end of this section.

Kenetic Anticipatory Imagery (KAI)

Reliability: Interrater agreement: since no judgmental decisions are required in coding this task, the two scorers agreed on 100% of the scores.

Validity: The correlation between PPVT scores and children's time scores on the KAI was .34, $p < .05$, indicating a degree of concurrent validity.

Intercorrelations between performance on the KAI and the other tasks are reported in Table 2 at the end of this section.

Conservation of Continuous Quantity

Reliability: (a) Internal consistency: a product moment correlation between predictions of the two transformations included within this task (short wide → tall thin container and vice versa) was .92. A rank order correlation between prediction and justification scores was .66.

(b) Interrater agreement: The consensus between the two coders was 91% before disputes were settled by a third judge.

Validity: A correlation of .33 ($p < .05$) was obtained between conservation scores and scores on the PPVT. This provides some evidence of concurrent validity.

Intercorrelations between performance on the conservation and the other tasks are reported in Table 1.

Table 1

Rank Order Correlations Between Tasks

Task	Conservation (justification)	KAI	SRI
Conservation (Prediction scores)	.66	.77	.78
(Justification scores)		.51	.63
KAI			.70
SRI			

Categorization

Reliability: (a) Internal consistency: This task has been used with over 2000 children in several investigations. Recently Meissner and Shipman (1973) reported an alpha coefficient of .91 for grouping responses.

(b) Interrater agreement: The coding manual is quite specific for this task and agreement between the two independent coders for our preschool program sample data was 95%.

Validity: Construct validity: Meissner and Shipman (1973) administered a battery of tests to the children participating in the research program. Factor analysis indicated that this task loads on an information processing factor. This is consistent with the rationale behind the construction of the test.

Rules and Conventions

Reliability: (a) Internal consistency: A product moment correlation was computed for types of arguments given. Spearman's correction formula yielded a value of .61.

(b) Interrater agrement: The two coders agreed with one another for 86% of the items scored. Disputes were settled by a third judge.

The Concept of Friendship

Reliability: (a) Internal consistency: A product moment correlation (using Spearman's correction formula) computed on scores for the first and the second half of the task was .64.

(b) Interrater agreement: Two independent scorers agreed with one another for 79% of the items. Disputes were settled by a third judge.

Interpersonal Problem-Solving

Reliability: (a) Internal consistency: A product moment correlation(using Spearman's correction formula) computed on the first strategies generated for odd and even numbered items was . 75.

(b) Temporal stability: The PIPS, from which this task was adapted, was administered by Spivack and Shure(1974) to 57 children in two sessions one week apart. A reliability coefficient of .72 and a standard error of 1.27 were reported.

(c) Interrater agreement: Interrater agreement ranges from 91-99% for the PIPS(Spivack and Shure, 1974). An agreement of 92% was obtained between two independent scorers for our preschool program sample.

Validity: Spivack and Shure(1974) report that inhibited and impulsive children perform less well on the PIPS than other children, and that performance is related to socioeconomic status. In addition, the PIPS scores are reported to vary consistently with changes in overt adjustment.

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Appendix C

PARENT-CHILD INTERACTION OBSERVATION SCHEDULE

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Prepared for: Office of Population Research

National Institute of Health

under

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Competence of Preschool Children

Educational Testing Service

Princeton, New Jersey 08541

1980

PARENT OBSERVATION INSTRUMENT

This instrument has been developed in a program designed to foster representational thinking competence in young children. Representation, an intrinsically inherent human capacity, involves the ability to mentally reproduce the past, anticipate the future, and assess alternatives in the present, transcending immediate spatial and temporal perceptions. This schedule is a listing of categories of parent behaviors which activate representational thinking (i.e., mental operational demands on the child to distance). We refer to these strategies as "distancing" strategies because they serve as a means to create psychological distance between the child and his immediate physical and temporal environment.

The instrument was developed and used to evaluate teacher-child interactions at ETS from 1975 to 1977. The mean inter-rater agreement across 14 twenty-four minute observations was 82%. The range of agreement for each of 14 observations was from 71% to 95%.

Manual for Coding Parent-Child Interaction Videotapes

Outline

I. Parent units

    A. Codeable unit from parent utterance

        1. Summary definition of entries

        2. Copy of coding form

    B. Communication cohesion

    C. Form

    D. Parent teaching and/or management

        1. Teaching, mental operational demands

        2. Structuring task and task supportive behavior

        3. Child management

    E. Verbal emotional support system

    F. Nonverbal parent behaviors

        1. Emotional support system

        2. Task facilitation

II. Child responses

    A. Rating of engagement

    B. Rating of child performance on task

III. Identification of unit on videotapes

IV. Categories of Mental Operational Demands

I. Parent units

A. Codeable unit from parent utterance

Every utterance from the parent will be coded. This emphasis is on verbalizations although some nonverbal behaviors will be coded, behaviors such as emotional physical contact, helping and take-over. Exact repeats will be coded as one unit, e.g., "That's right, that's right."

A complex sentence with two separate demands will be separated by demand. Each demand will be coded in a separate box with a child response coded for each, or no time (NT) if responses required can't be combined.

Example: "Look at #2, and tell me what we should do."

code observe + child response in block 1
code plan + child response in block 2

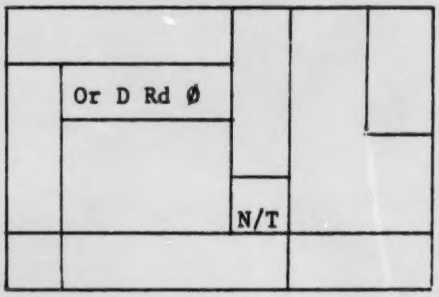
When the demands are redundant in a complex sentence or question, meaning the same Mental Operational Demand (see Parent-Child Interactions Observation Schedule, PCI, for definitions) appears in both parts, code the demands in only 1 box.

Example: "Hand me a piece of paper and take one for yourself."

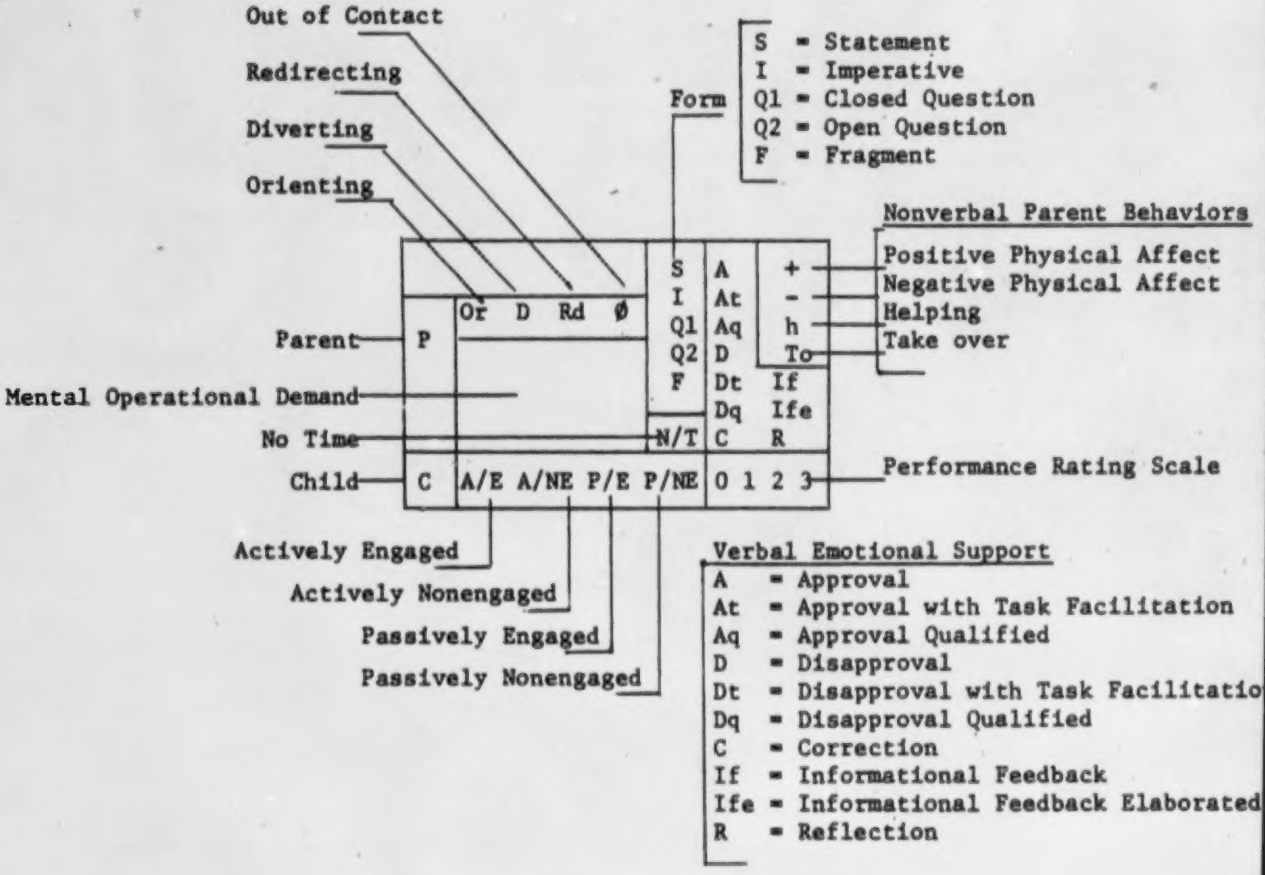
code as structuring + child response in one box

B. Communication cohesion

This is coded along with the Mental Operational Demand (MOD), Form, the Emotional Support, and task or child management.



SUMMARY DEFINITION OF ENTRIES


Out of Contact
Redirecting
Diverting
Orienting
Parent
Mental Operational Demand
No Time
Child
Or D Rd Ø
P
C
S I Q1 Q2 F
N/T
A At Aq D Dt Dq C
+ - h To If Ife R
A/E A/NE P/E P/NE
0 1 2 3
Form
Performance Rating Scale
Actively Engaged
Actively Nonengaged
Passively Engaged
Passively Nonengaged

S = Statement
I = Imperative
Q1 = Closed Question
Q2 = Open Question
F = Fragment

Nonverbal Parent Behaviors

+ Positive Physical Affect
- Negative Physical Affect
h Helping
To Take over

Verbal Emotional Support

A = Approval
At = Approval with Task Facilitation
Aq = Approval Qualified
D = Disapproval
Dt = Disapproval with Task Facilitatio
Dq = Disapproval Qualified
C = Correction
If = Informational Feedback
Ife = Informational Feedback Elaborated
R = Reflection

Coder__________________ ETS/UW Family Project ID No.__________________

Date__________________

Child-Parent Interaction Analysis

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

P	Or D Rd 0	S I Q1 Q2 F N/T	A At Aq D Dt Dq C	+ - h To If Ife R
C	A/E A/NE P/E P/NE	0 1 2 3		

Diverting (D) - Off task: parent changes focus to something off task, or if child is off task parent focusses on something else off task rather than redirecting

Redirecting (Rd) - Bringing back to task: child is off task and parent directs focus back to task or parent has been off task and redirects focus to task.

Example: Either of above can follow A/NE, coded for child in the previous unit block. Also, code above for Mental Operational Demand when relevant, or Emotional Support.

parent initiates a diversion: D/MOD, etc.

parent maintains a diversion initiated by child: D/MOD, etc.

parent redirects to task: Rd/MOD, etc.

Orienting (Or) - Usually fragments used to get or hold child's attention and move the task along. It contains no hint of affect or approval.

Example: "Okay" "All right"

There are times when "Okay" and "All right" are used as orienters or a means to move the task along and have no approval quality, but there are other times when they are used for approval. The coder has to make the decision based upon what's going on at the time. When orienting is coded, do not code approval.

Examples: "Okay, let's get started."

(Or) + (St) (no approval)

"All right, this is going to be fun."

(Or) + (Eval con)

When words such as "Okay" and "All right," are used as approval, they may appear alone following successful completion of a demand, in which case code as approval only, OR they may appear with the next step indicating approval of the past step.

Example: "Okay, what's next?" (approving last step and moving task along)
(app) + (Seq)

If the "Okay" or "All right" followed an approval which indicated the completion of the last step, it would be considered orienting.

Example: "That's good."
(app - coded alone)
"Okay, what's next?"
(Or) + (Seq) (code in next block)

Out of Contact (0) - Parent may either be on or off task but is not responding to the child. For example, the parent may get totally involved in folding own object or daydreaming or talking to self, in which case there would be no demand made on the child.

No Time Given (NT) - Parent does not allow time for a child response: when the parent is "bombarding" the child with a series of questions and/or fragments, there is no time for a child response because of incompatible parent followup. Code all but the last unit in a series with NT. The last question in a series will not have NT coded, indicating time has been allowed for the child response. NT will be coded for every parent entry. After a parent statement followed directly by another utterance, there is no demand except to listen so code Passively Engaged if child is listening but do not code NT. After a parent imperative requiring a child response, motoric or verbal, and no time is given, code NT and do not code a child response. After a parent question followed directly by another utterance, do code NT but do not code a child response.

Examples: "Should I fold it this way? What should I do next?"

(no hesitation - code NT, do not code child response)

"Fold it this way. Wait! This isn't straight."

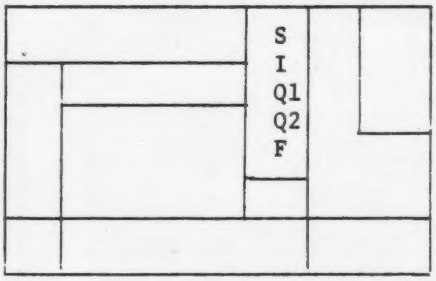
(no hesitation - code NT, do not code child response)

"This is blue. It's light blue."

(no hesitation - do not code NT, code Passively engaged if child listening)

C. Form

This is coded for Mental Operational Demands, Task or Child Management, and the Emotional Support System.



Statement (S) - A declarative sentence, telling, giving information. Coded for demand on child, including the demand to attend and to understand the mental operation performed by the parent, although the engagement of the child may be quite passive.

Example: "I'm going to make one first."

Imperative (I) - A command; giving directions for a behavior.

Example: "Fold it this way." "Stop that!" "You must be still."

Question$_1$ (Q_1) A question which reflects convergent thinking; may be one word answers or imitative statements (What did I say?); closed questions involving recall, or simple yes, no answers.

Examples: Parent asks: "What did I just say?"

"What is the name of the book you read in school?"

"What three ways can you fold the paper?"

"Do you want to turn the page?"

Question$_2$ (Q_2) - An open question with "demand" quality or elaborated, divergent qualities where the question requires reconstruction and where the child has a choice in how the answer is given.

Examples: Parent asks: "What ways can the paper be folded?"

"What kinds of boats do you like?"

"What did you do in school today?"

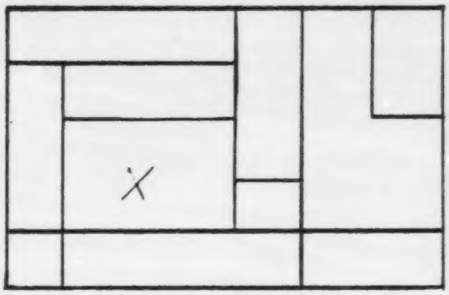
"What did you like about the story?"

Fragment (F) - Incomplete sentence or question. If a fragment stands alone, or makes a demand different from the following utterance, try to code for Mental Operational Demand. Do not code false starts, code what follows next. If a fragment is not approval and fits with what comes next with no child response in between, incorporate into what comes next.

Examples: "Fold ... That's right!"
(F)
"Fold - No, wait!" (no hesitation after fold)
(ignore) (disapp) + (st)

D. Parent Teaching and/or Management

This includes Mental Operational Demands, Task Management and Child Management



Mental Operational Demands (MOD) - Demands on the child to think representationally. See Parent-Child Interactions Observation Schedule (PCI) for definitions.

Task Management - Preparation and maintenance of the task. See PCI for full definition.

Structuring of the Total Task (St.T.) - Global telling of what is going to happen, gestalt of the task.

Examples: "I am going to teach you how to make that boat."

"We are going to fold the paper just like on the board until we have an airplane."

"We are going to look at this book together."

Structuring of Task Related Behavior (St) - Specific behavioral directions related to task or facilitating task. Also telling child what is going to happen short of defining total task. More of a step-by-step telling what to do. See PCI.

Examples: "Fold it flat."

"Here's a piece of paper for you and here's a piece of paper for me."

"Turn it toward the door."

Structuring with Explanation (St/Ex) - See PCI.

Structuring Rule - See PCI.
(St/R)

Structuring with Demonstration - Telling child what to do with the additional element of parent "showing or demonstrating."

Examples: "Fold it this way." (parent demonstrating)

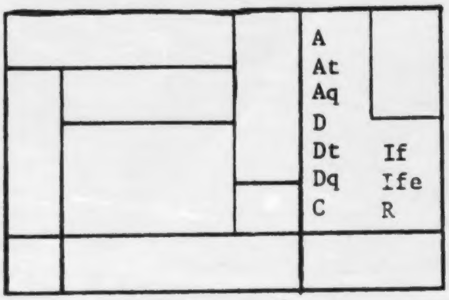
"Turn it the way I'm turning mine."

"Push harder right here." (parent pointing)

Child Management - Coded if child is doing something the parent doesn't like, the behavior is considered wrong by the parent - a misbehavior rather than an error on the task - and the parent attempts to stop or change the behavior. Parental efforts at modifying child's nonintellective behavior in the social or emotional domain. See the PCI for categories.

E. Verbal Emotional Support System

These are parental verbalizations which provide affection and/or support for the child. These behaviors do not make cognitive demands, but rather they serve to encourage and/or to guide the child's efforts in dealing with the



task. The parent seems to be responding to the child's previous performance as well as providing emotional support for subsequent performance. When units are coded as "emotional support," mental operational demands are included only for Approval with Task Facilitation (At) and Disapproval with Task Faciliation (Dt).

Approval (A) - Positive verbal feedback without additional task specific information.

Examples: "That's very good."
"That's great!"
"Isn't that great?" (Not waiting for response)
"I really like that."
"Right."
"Very good."
"Okay."

Approval with Task Facilitation (At) - Positive verbal feedback with additional task facilitation, such as moving the task forward.

Examples: "Yes, now fold it this way."
(app) (st/dem)

"Right, now what do we do?"
(app) (pl)

"Okay, now look at No. 2."
(app) (obs)

Approval, qualified (Aq) - Positive verbal feedback with some additional suggestion, usually task specific.

Examples: "That's very good but press it down a little more."

"Okay, but it would fly better this way."

"Yes, but this fold might be neater."

Disapproval (D) - Negative verbal feedback without additional task specific information.

Examples: "That's wrong."

"No, not like that."

"It'll never fly!" (with disapproval tone of voice)

Disapproval with Task Facilitation (Dt) - Negative verbal feedback with additional task facilitation

Examples: "No, look at No. 3."
(disapp) (obs)

"No, what should we do?"
(disapp) (pl)

Disapproval, qualified, (Dq) _ Negative feedback combined with a more positive comment or suggestion, usually task specific.

Examples: "That's wrong, but maybe it will work."

"That's a messy fold, but this one looks okay."

"Not that way, but we can fix it."

"No, but turning it around would work."

Correction (C) _ Feedback when a mistake has been made but no overt approval or disapproval; includes task specific information.

Examples: "It would work better if you folded it over here."

"If that were pressed down harder, it would be easier."

"If the points touch, this fold will come out better."

Corrections could also be interpreted as structuring. Give coding priority to correction if clearly in response to an error by child.

Informational Feedback - Parent responds to the child's inquiry by providing information. There are two categories here.

(If) - A simple, directly relevant and nonelaborated response.

Examples: Child asks if plane is ready to fly and Parent response: "Not yet."

Child asks "What is this called and Parent response: "A sailboat."

(Ife) - An elaborated response which expands the information into more than one statement; may go on for several statements. Mental Operational Demands will not be coded as long as the parent is responding to the child's inquiry in statement form.

Examples: Child asks how a sailboat works and Parent response: "The air gets caught in the sail of the boat and pushes it along. Also, there is a rudder which you move to steer the boat."

Reflection

(R)

- Parent in response to the child, captures the child's meaning or mood in statement form; can be essentially the same words, adding no information so that the meaning of the child's statement is not changed. Direct or implied questions are not reflections even though the meaning is similar. There is no explicit or implicit demand in a reflection.

Examples: Child: "I want to go over to my friend's house."

Parent: "You do not want to stay here."

Child: "That's a sailboat."

Parent" That is a sailboat."

Child: "That's hard, I can't do it."

Parent: You feel that's too hard for you."

DO NOT CODE THESE AS REFLECTIONS:

Child: "That's a boat."

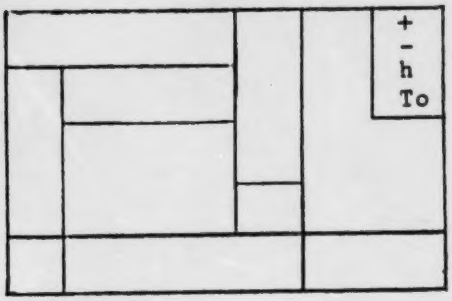
Parent: "That's a sailboat." ("sail" adds additional information so code the Mental Operational Demand/statement

Child: "That's just like the picture."

Parent: "That's just like the picture?" (The question form puts a demand on the child to respond so code the Mental Operational Demand/Question.)

F. Nonverbal Parent Behaviors

These are coded in addition to Mental Operational Demand, the verbal Emotional Support or alone, however the behavior occurs.



Nonverbal Emotional Support

Positive Physical Affect (+) - Obvious physical demonstration of affection.

Examples: hugging alone = +

hugging plus "You're great at this!"
(+) and (App)

Negative Physical Affect (-) - Obvious physical punishment or show of disapproval or hostility.

Examples: Spanking or shoving into chair alone - code (-)

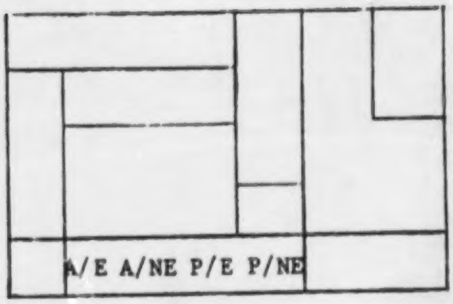
Shoving into chair plus
(-) and
"You sit there!"
(PA)

Nonverbal Task Facilitation

Helping (h) - Parent intervenes or assists physically with task, both parent and child are touching the object.

Take Over (To) - Parent intrudes and does task while child is idle; child's hand is not on the object and parent does it for him.

II. CHILD RESPONSES



The child response is important in terms of measuring parent sensitivity to child, with success indicated by engagement of child. If the child remains nonengaged for some period of time without the parent redirecting or diverting to join child or using some form of child management, the parent is indicating an insensitivity to the child. We are not specifically coding the child as initiator though the parent as responder (see the Emotional Support System) will indicate when the child is in control. Child Response will be coded for every parent entry, Mental Operational Demands, Emotional Support, and Nonverbal Emotional Support.

A. Rating the Child's Engagement

Actively Engaged (A/E) - The child gives an active, relevant response, the correctness is not important.

Actively Nonengaged (A/NE) - The child is involved in an irrelevant response or another activity entirely, with active involvement.

Example: Playing with the phone instead of folding.

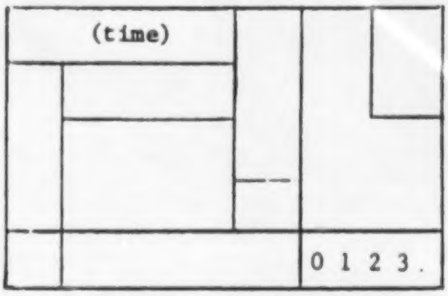
Passively Engaged (P/E) - The child is attending (listening) but there is no visible physical or verbal response other than eye fixation and orientation.

Passively Nonengaged (P/NE) - The child is neither attending nor exhibiting any overt nontask behavior; could be non-response to a question or imperative or looking away when parent is demonstrating, reading, etc. Primarily, picked up by child looking away.

Example: If the parent diverts and child joins in: "We're going to the zoo later." (parent) "Great!" (child) - code A/E)
(child just listening) - code P/E

If parent diverts and child ignores (continues with task) or diverts to another topic, code A/NE.

B. Rating Child's Performance -



An evaluation by the coder of the child's performance at the completion of each step according to the following rating scale. This is only coded for the paper folding task. For the younger child this will involve six steps, for the older child, there will be nine steps. The time unit should also be coded. Since the performance is rated only upon completion of a step, there will be blocks with nothing coded.

Rating Scale:

0 - Total failure to complete the step by child

1 - Step completed with much help and/or child mistakes

2 - Step completed with some physical assistance

3 - Step completed correctly with almost no physical assistance (verbal assistance allowed), and with few mistakes

III. Identification of unit on Video Tape

Family ID No with MY = mother - younger child
MO - mother - older child
FY = father - younger child
FO = father - older child

Should be recorded on each coded sheet.

Each second of time passed since beginning of tape will be displayed on the screen. This use of the time display generator will make inter-rater reliability more feasible.

Record in upper left corner of unit box, first unit on each page and first unit of third and fifth line. Also note when there is a question. Key words can also be noted.

During story, record beginning and ending time of each unit of continued reading in one box.

IV. Mental Operational Demands on Child through Parent Distancing Strategies

Demand on child to . . .

Observe (obs)

Definition: Getting the child to attend using any senses: hearing, seeing, smelling; asking the child to examine, e.g., parent demonstrating which demands that the child observe.

Examples:
"Look at the book."
"Do you see No. 1?"
"Watch - this is how you fold it."
"Look what happens when I fold it this way."
"Go look at No. 2."
"Do you see how the airplane will look when we're through?"

Comment: The form of the demand is in a verbal context, and the parent's action is a demonstration, BUT the child to comply must observe, hence parent demand behavior coded as observe. Must be distinguished from structuring (see structuring/explanation and structuring/demonstration

Label (lab)

Definition: Naming a singular object or event or action; naming a place, appropriate designation of something, locating; identify, a single discrimination; NO ELABORATION; ownership, possessives. Labelling is discrete and does not involve inference.

Examples:
"Do you know the name of this book?"
"Do you know the name of what we're going to make?"
"Where is the rock in this picture?"
"Do you know the name of this?"
"What is the color?"
"What do you have on your feet?"
"What do you call what she is doing?"
"Where is the book?"
Whose book is this?"

Comment: To be distinguished from concept or class labelling which is symmetrical classifying (see symmetrical classifying).

(a) Produce Information (prod)

Definition: Produce, process, confirm or reject information about general knowledge of instances, materials, events; associational information. Requires a yes - no answer from child.

Examples: "Is this called a boat?"
"Is the boy throwing the rock?"
"Is this a rainbow?"
"Are you making a boat?"
"Do airplanes fly?"

Comment: Only questions appear here, no parent telling.

Describe (des)

Definition: Providing elaborated information of a single instance, e.g., appears like, looks like. A statement may be definitional. Actions or inner states of self such as feelings, fantasies, ideas, are classes of parent verbalizations coded in this category.

Examples: "There are many flowers hiding the rainbow."
"What is the boy doing?"
"What is a rainbow?"
"What is make-believe?"
"The boy is pretending the rock is all these different things."

Comment: Static: no dynamic relationships among elements, no use, no functional context.

(a) Interpretation (intp)

Definition: To attribute or to explain meaning; more personal than a definition.

Examples: "What do you mean?"
"What does it mean to make believe?"

emonstrate (dem)	Definition:	Showing primarily through action or gestures how something is to be done; the *how* process.
	Examples:	"Show me how to fly it?" "Let me see you make the airplane."
	Comment:	If the parent does the demonstrating, the demand on the child is to observe (see comment under observe).
equence (seq)	Definition:	*Temporal ordering* of events, as in a story or carrying out a task; steps articulated. Types of key words are *last*, *next*, *afterwards*, *start*, and *begin*.
	Examples:	"First we'll do #1, then we'll do #2." "What do we do next?" "Is #4 next?" "What did the boy pretend first?"
	Comment:	Not to be confused with structuring, as in "Paul, it's your turn."
eproduce (rep)	Definition:	*Reconstructing* previous experiences; dynamic interaction of events, interdependence, functional; *open-ended*; child's organization of previous experience.
	Examples:	"Did you make one of these with Daddy?" "Did you paint a rock in nursery school?" "Have you flown on a plane?"
(a) Reproduce/____ (repro/other categories)	Definition:	A closed reconstruction where any clue is given, convergent, in combination with any of the other categories.
	Examples:	repro/lab - "Name the three steps we just did." repro/seq - "What step came after number one?" repro/esti - "How many steps did it take to make the boat?"

Propose Alternatives (pro alt)

Definition: Different options, different ways of performing the task; no negative aspect. Possible key words are other, another, different from before.

Examples: "What other way could we fold this?"
"Do you know another way to make a boat?"

Comment: Not additive as in "What else do we need to add?" or "Can you tell me something else?" No articulation of judgment as in a "better way to do it."

Resolve Conflict (res con)

Definition: Presentation of contradictory or conflictful information with a resolution; problem solving; negative condition exists with focus on an alternative solution - one situation which is an impossibility needs to be resolved in another way; does include inferences of cause-effect relationships but includes an additional element of identifying the central element in one situation that can be transferred to another situation.

Examples: "If there were no paper, how could we made an airplane?"
"If there is no light in here, how could we see to read?"

Compare

Definition: Describing or inferring characteristics or properties across classes, not within - two separate instances being compared; noting the existence of a similarity or difference, describing or inferring only how alike or different

Comment: No explicit statement of what characteristic is common to both is coded here, since that is symmetrical classification.

(a) Describe Similarities (des sim)	Definition:	Noting ostensive common characteristics. Perceptual analysis - comparison of sensory materials present in the interaction, e.g., objects, rhymes, pictures, etc.
	Examples:	"Is your boat like mine?" "Fold yours the same way as mine."
(b) Describe Differences (des dif)	Definition:	Noting ostensive differences among instances. Perceptual analysis - comparison of sensory materials present in the interaction, e.g., objects, rhymes, pictures, etc.
	Examples:	"Is your plane different from mine?" "Which plane looks different from #6, yours or mine?"
(c) Infer Similarities (inf sim)	Definition:	Identifying nonobservational commonalities. Conceptual analysis - instances not present for sensory comparison (see comment below); analogies, part-whole relationships.
	Examples:	"This looks more like a hat than a boat." "Does it look like a mirror to you?"
(d) Infer Differences (inf dif)	Definition:	Identifying nonobservable differences. Conceptual analysis - instances not present for sensory comparison (see comment below).
	Examples:	"Does your plane look different from a real plane?" "How does this rock differ from the last one?"
	Comment:	Inference refers to literal nonpresence of all or part of the materials. In inferring "Are a dog and a tiger alike," neither instances may be present which requires an inference about both of them; or one of them may be there, e.g., as a toy, picture, or live, which still requires an inference although only about one of them.

Combine	Definition:	Stating the reason for combining.
(a) Symmetrical Classifying (sym class)	Definition:	Identifying the commonalities of a class of equivalent instances or labeling the class; stating why instances are alike, not how.
	Examples:	equivalence - "Why is yours like mine?" "Why is this plane like a real plane?" class label - "What do you call red, yellow, blue, and green?" "What do you sail on the lake in, or canoe in?"
(1) Estimating (esti)	Definition:	Estimating quantity.
	Examples:	"How often do you see rainbows?" "How many things can you do with a box?" "How many steps are on the board?"
(b) Asymmetrical Classifying (asym class)	Definition:	Organizing instances within the same class in some sequential ordering; logical hierarchy; viewing the relationship as a continuum; seriation of any kind; comparative where each instance is related to the previous one and the subsequent one; relative (bigger to smaller, more or less).
	Examples:	"Is your boat better than mine?" "Does your plane fly better than mine?" "Which boat looks most like the one on the board, yours or mine?"
(1) Enumerating (enum)	Definition:	Seriation, enumeration of number of things; ordinal counting (1,2,3,4,5).
	Examples:	"Count the steps on the board." "Count the steps we've finished." "Count the rocks in the book."

(c) Synthesizing (syn)	Definition:	Organizing components into a unified whole; explicit pulling together; creating new forms; sum of a number of discrete things.
	Examples:	"When you add "rain" to "bow," what word does that make?" "Do we have a fleet of sailboats?" "How many things do you know that can fly?"
Evaluate	Definition:	Assessing the quality of any givens.
(a) Consequence (eval con)	Definition:	Assessing the quality of a product, or outcome, or feasibility, or the aesthetic quality of personal liking. Criteria needed for evaluation, e.g., good - bad, right - wrong, fun - not fun, silly - not silly. Evaluation of parent's interpretation of what the child means.
	Examples:	"If rainbows are real, can you play with them?" "Can we build a castle with sand?" "Could we paint a rock and use it for a paperweight?" "Is this a good airplane?" "This is hard to make." "Do you like this book?"
	Comment:	Conditional competencies or qualified "can you" questions are included under this category.
(b) Own Competence (evalcomp)	Definition:	Assessing own competence or ability.
	Examples:	"Can you fold it like this?" "Do you know how to make a boat?" "I can make a boat with paper." "I can't do it."
	Comment:	Includes those statements that use the word can literally, e.g., physical and/or social feasibility; also must contain a personal reference (not a collective "you" or "we").

(c) Affect (eval aff)	Definition:	Assessing the quality of a feeling state.
	Examples:	"Is it fun to feel happy?" "Do you like to feel sad?" "How do you feel about feeling sad?"
(d) Effort and/or Performance (eval perf)	Definition:	Assessing the quality of the performance and/or the effort expended on a task (ignore confirming, e.g., "That's neat."; "That's good.")
	Examples:	"Did you work hard at that?" "You did that well." "Did you do that efficiently?" "Are your working hard or are you playing?"
(e) Necessary and/or Sufficient (eval nec)	Definition:	Assessing information that is necessary or sufficient for something to happen; reality confirmation; recognition of absurdities.
	Examples:	"Can the boy really catch the rainbow?" "Can you have a rainbow when there is no sun?" "Do you have to have a rock to hold the paper?"
Infer	Definition:	Focusing on nonapparent, unseen properties or relationships
(a) Cause-Effect (inf c-e)	Definition:	Predicting outcome on the basis of causal relationships of instances or statement thereof; explanation or reason for some event, direct or indirect.
	Examples:	(cause) (effect) "How could you make it fit in that hole? (effect) (cause) "We can make a boat by folding this paper?" (cause) (effect) "How can you keep the wind from blowing paper away?" (effect) (cause) "Will the airplane fly when you throw it?"

(cause) (effect)
"If we fold it like that, what will we make?"

(b) Affect/Feelings (inf A)	Definition:	Predicting or assessing how a person feels, or believes, or intends.
	Examples:	"Was the boy feeling sad? "Did Pat mean to tear up the box?"
	Comment:	Not a description of affective behavior.
(c) Effects (inf E)	Definition:	Predicting what will happen without articulating causality; effects of a cause; prediction of someone else's competence, or feasibility, or location.
	Examples:	"Did he find it?" "Where will the rainbow hide?" "Will Pat tear up this box?" "Will the string work all those things?"
Generalize (gen)	Definition:	Application or transfer of knowledge to other settings or objects; a new situation going beyond the immediate task or context.
	Examples:	"This is my own shirt and that is your own shirt and that is a rainbow of his own." "Now that we know rainbows and rain water go together, do you think the fish bowl water can make a rainbow?"
Transform (tran)	Definition:	Changing the nature, function, appearance of instances; focusing on the process of change of state of materials, persons, or events. Inferring is a part of this - the prediction of what will happen relating to a change of state.
	Examples:	"What do you need to do to a rock to change it into sand?"

		"What will the rock turn into if you smash it?" "What will Catarina become when she lives in the castle?"
Plan (pl)	Definition:	Arranging of conditions to carry out a set of actions in an orderly way; acting out a rule of the task or actual carrying out the task. The child is involved in the decision.
	Examples:	"What do you want to do?" "Do you want to read to me?" "Do you have to open it up before doing the next fold?" "How can we make a plane with this paper?" "If you want the fold here, what should you do?"
	Comment:	If cause-effect is indicated, materials must be present. Most often appears in the form of questions; but indirect questions and imperatives seeking information may also appear.
(a) Confirmation of a Plan (pl C)	Definition:	Checking whether the plan was carried out.
	Examples:	"Does it look the way you expected it to?" "Did it turn out the way you wanted?"
Conclude (concl)	Definition:	Relating actions, objects or events in an additive and/or integrative way; summarizing, reviewing. This category is used for the last parent statement or question in a series of questions leading up to a conclusion. Key words are so, therefore.
	Examples:	"Are you finished?" "Looks like it's wet so must've rained, huh?" "Who's winning the race?" "If the rock becomes sand, could it be used as a paperweight?"

Comment: The child has to go through more than one cognitive step to arrive at an answer.

MANAGEMENT OF TASK	AND	MANAGEMENT OF CHILD'S BEHAVIOR
Task is defined as: content, cognitive demand, activity demands of the task, materials of the task, setting limits of task; have to allow for mistakes but not misbehavior.		If child is doing something the parent doesn't like, the behavior is considered wrong by the parent - a misbehavior rather than an error on the task - and the parent attempts to stop or change the behavior. Parental efforts at modifying child's non-intellective behavior in the social or emotional domain.

TASK MANAGEMENT

(a) Structuring of the Total Task (st.T.)

Definition: Global telling of what is going to happen, gestalt of the task.

Examples: "I am going to teach you how to make that boat."
"We are going to fold the paper just like on the board until we have an airplane."
"We are going to look at this book together."

(b) Structuring of Task Related Behavior (st)

Definition: Specific behavioral directions related to task or to facilitating task. Telling child what is going to happen short of defining total task. Also action to delay child's response as a means of facilitating organization or reorganization of thought or actions.

Examples: "Fold it right here."
"Turn it over."
"Flip the page"
"Wait!" "Just a minute."

Comment: The only questions to appear under structuring are "Will you ... " questions, e.g., "Will you get me a piece of paper?"
"Would you clean the table?"

(c) Structuring with Explanation (st/ex)	Definition:	Telling the child what to do or what is going to happen with an accompanying explanation.
	Examples:	"You have to crease it hard to make it stay folded." "Take a piece of paper because we're going to make a boat." "I can't do it for you because I'm supposed to teach you how."
(d) Structuring Rule (st-R)	Definition:	Setting up of the *rules* of an activity, game, task, use of materials or explanation of rules, or social interactions with adults and/or peers; *defining the limits*. This includes rules of social interaction, but deals only with setting or defining the limits, not with enforcement after the rule has been broken.
	Examples:	"The rule is you have to make a plane." "What are you supposed to make?" "The rule is we can't take those models off the board.
	Comment:	The only types of questions to appear under this category refer to *expected* actions, e.g., *should you*, *supposed to do*, *need to do* questions referring to the rules or the procedures of an activity: "What should you do with the paper?" "Where do you need to place the chair?"
(e) Structuring with Demonstration (st/D)	Definition:	Telling child what to do with the additional element of parent "showing or demonstrating."
	Examples:	"Fold it this way." (parent demonstrating) "Turn it the way I'm turning mine." "Push harder right here." (parent pointing)

CHILD MANAGEMENT

(a) Power Assertion (PA)	Definition:	Physical or verbal no-choice situation regarding compliance to the message; the decision is by the parent and the child is to comply; threats and warnings, or restraining the child.
	Examples:	"Come back to the table!" "Don't pull those off the board!" "Leave the phone alone!"
(1) Power Assertion with reason (PA/R)	Definition:	Where the no-choice aspect is still present but where arbitrariness regarding demands is reduced by the parent's use of justifications or explanations..
	Examples:	"Come back 'cause we have to finish." "Don't pull those off the board 'cause the lady said not to." "Leave the phone alone so we can finish this."
(b) Persuasion	Definition:	Techniques which give the child choice whether or not to comply; provide him with the information regarding implications of the behavior in question, and have the quality of appealing to some aspect of his psyche, e.g., conscience, self-interest; if - then relationships in behavior; threats with choice.
(1) Rational (rat)		Information provided relates the child's behavior to that which is logically appropriate to the situation.
	Examples:	"If you look at it, you'll be able to do it." "If you stop yelling, I'll be able to understand you." "If you play with the phone again, we'll never finish this."
(2) Normative (norm)	Definition:	Information provided refers to a given standard.
	Examples:	"If you pull those off the board, you'll be doing what the lady said not to do." "If you don't listen, we can't read the story like we're supposed to."

(3) Emotional Appeal (emot)	Definition:	Appeals to child's conscience; guilt induction and the reverse, which is affirmation; statement of personal reaction to the child's action; reinforcement for following a rule or expected behavior.
	Examples:	"This is so much fun. Why don't you try it?" "I'm glad you're listening so nicely." "You make me very sad by doing that." "That makes me mad?" "You're not being very nice today."
(c) Suggestion (sugg)	Definition:	Techniques indicating the direction for the child's behavior to take with practically no pressure to comply and no arbitrariness; child's choice to comply with no pressure.
	Examples:	"Would you turn the light back on?" "Would you stop crumpling the papers?" "Would you listen instead of talking?"
(d) Use of Explanations		
(1) Seeking an Explanation (se/ex)	Definition:	Asking the child for an explanation or information in the area of social behavior, after a rule infraction.
	Examples:	"Why did you do that?" "Why are you yelling?"
(2) Giving and Explanation (giv/ex)	Definition:	Reflection of an action, a feeling, or a state.
	Examples:	"Yelling disturbs everyone." "Crumpling the papers won't get a boat made."
(e) Rule Reference (man-R)	Definition:	Explicit reference to an existing rule; reiteration of a rule after rule infraction related to the expected behavior.
	Examples:	"What did the lady say we should do?" (child going in and out of room) "What did I say was the rule about taking those off the board?"